The Journal
OF THE KANSAS MEDICAL SOCIETY

In This Issue

ACUTE ANESTHETIC EMERGENCIES—Paul H. Lorhan, M.D., and E. Metz Wright, Jr., M.D., Kansas City, Kansas . . . . . Page 421

AN ABSTRACT OF NEW GROWTHS OF THE SKIN AND THEIR MANAGEMENT — Charles C. Dennie, M.D., and Donald L. Fuhrman, M.D., Kansas City, Kansas . . . . . Page 425

PERSONALIZED PRE-PARTUM CARE—John H. Moore, M.D., Grand Forks, North Dakota . . . Page 430

REHABILITATION OF THE QUADRICEPS — American College of Surgeons . . . . . Page 434

COMPLETE TABLE OF CONTENTS . . . . Page IV

September, 1951 Vol. LII, No. 9

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TABLE OF CONTENTS

SEPTEMBER, 1951

ORIGINAL ARTICLES

Acute Anesthetic Emergencies—Paul H. Lorhan, M.D., and E. Metz Wright, Jr., M.D., Kansas City, Kansas 421

An Abstract of New Growths of the Skin and Their Management—Charles C. Dennie, M.D., and Donald L. Fuhrman, M.D., Kansas City, Kansas 425

Personalized Pre-Partum Care—John H. Moore, M.D., Grand Forks, North Dakota 430

Rehabilitation of the Quadriceps—American College of Surgeons 434

EDITORIALS

Indigent Health Care 439

Physicians' Incomes 440

Medical Education Foundation 441

MISCELLANEOUS

Blue Shield 437

President's Page 438

Case Reports from the University of Kansas Medical Center 442

Senior Thesis from the University of Kansas Medical School 448

Socialized Medicine 460

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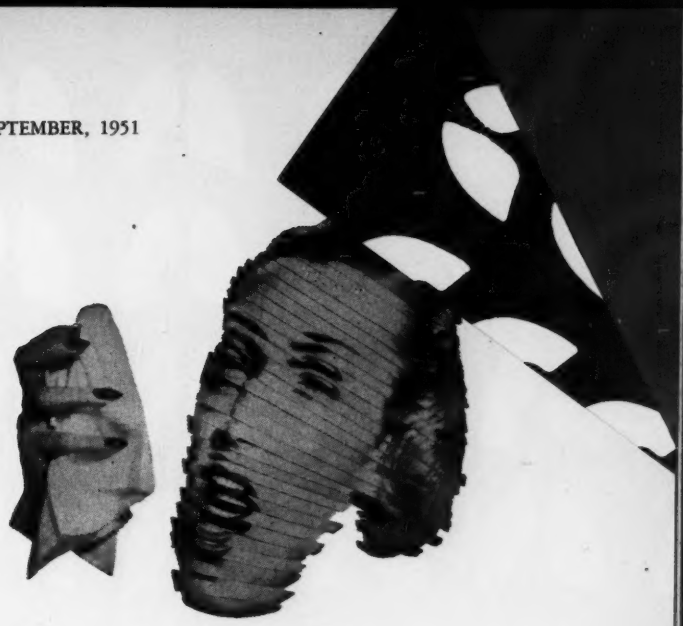

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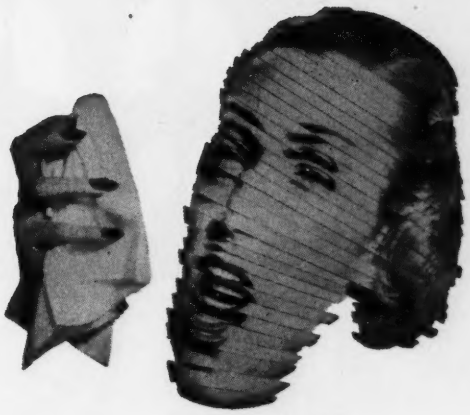

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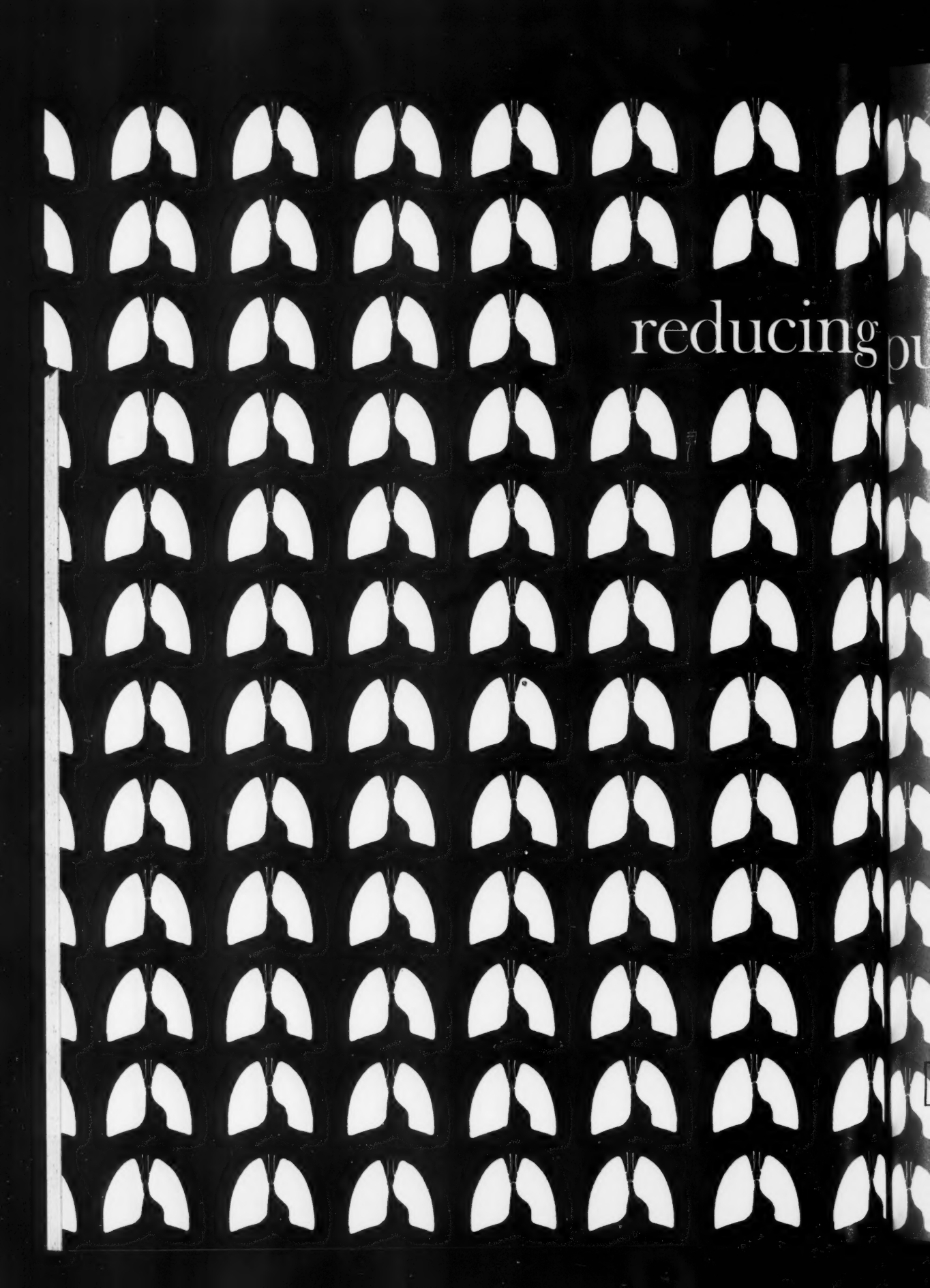
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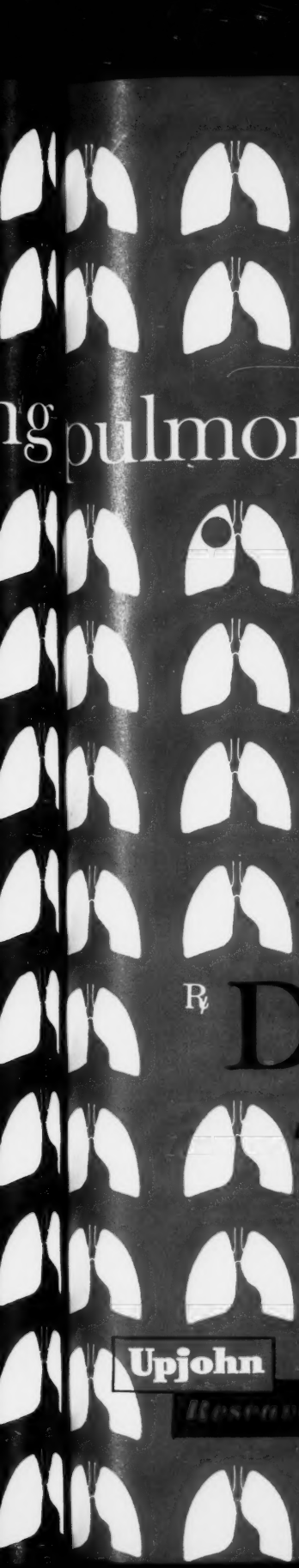

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1. Bauer, Gunnar: Nine Years' Experience with Heparin in Acute Venous Thrombosis. Angiology, Vol. 1, No. 2, (Apr.) 1950.

2. Smith, William J.: Long-Acting Heparin Preparations: A Useful Adjunct in Anticoagulant Therapy. U. S. Armed Forces Med. J., Vol. II, No. 1 (Jan.) 1951.

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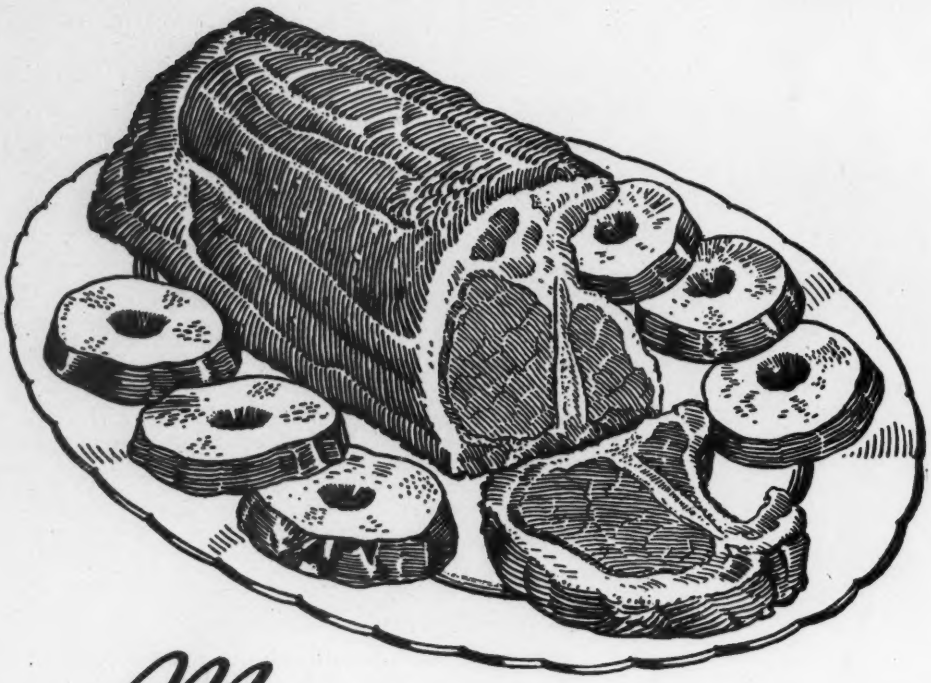

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*McLester, J. S.: Protein Comes Into Its Own, J.A.M.A. *139*:897 (Apr. 2,) 1949

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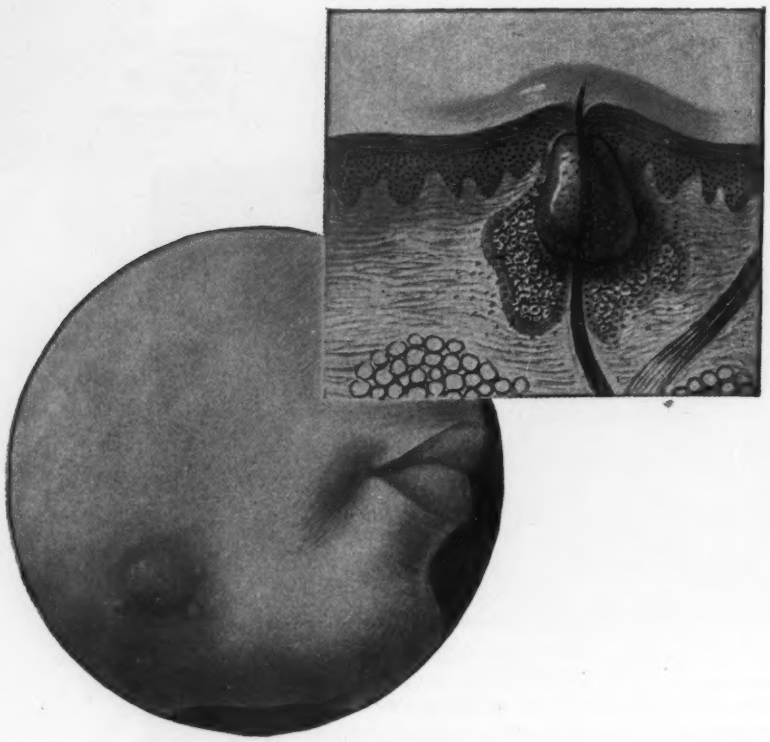

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Wright, L. T., et al.: Antibiotics and Chemotherapy 1:165 (June) 1951.

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Erysipelas • Peritonitis

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Dysentery • Urinary tract infections
Respiratory tract infections
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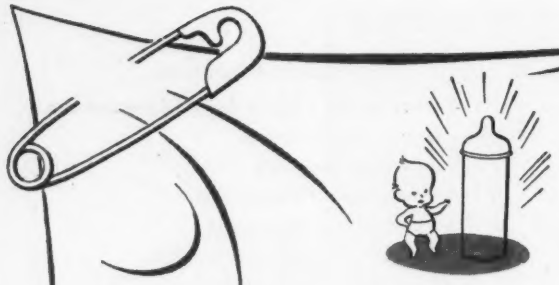

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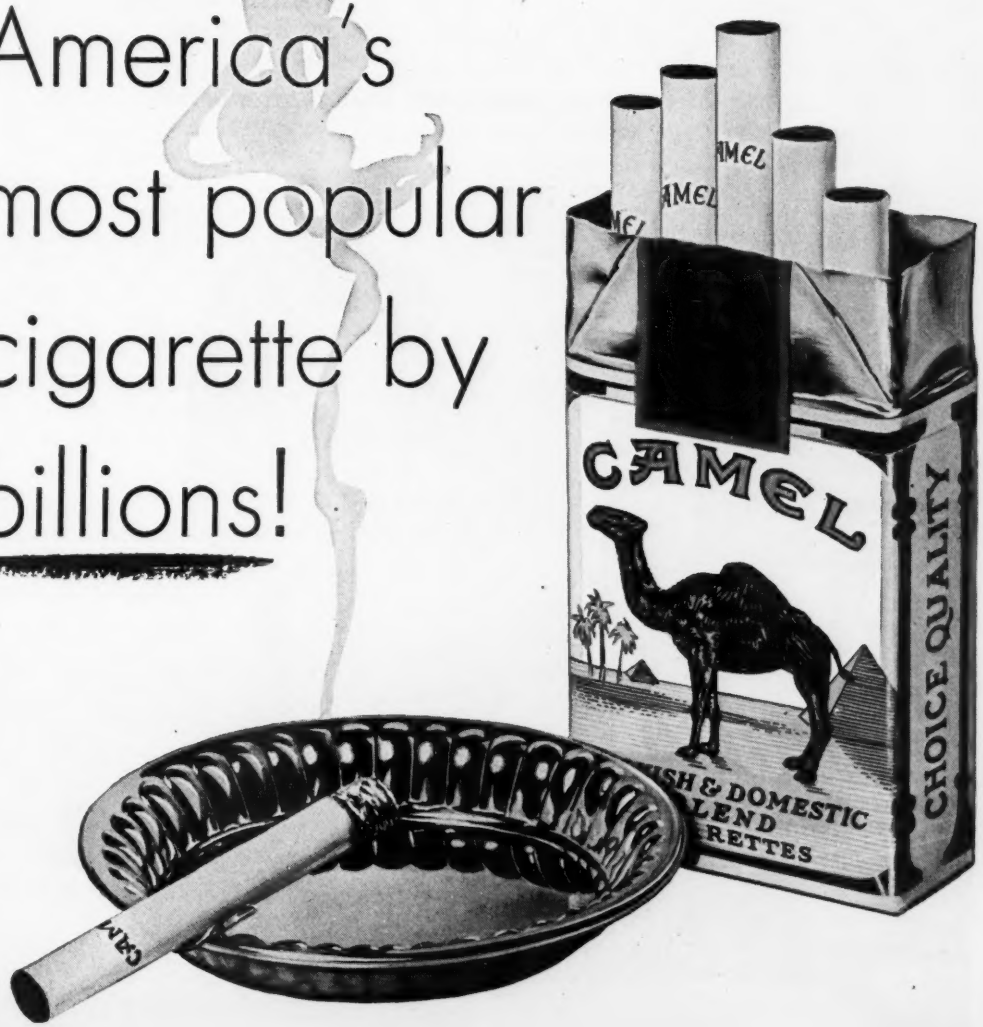

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plenty of citrus fruit

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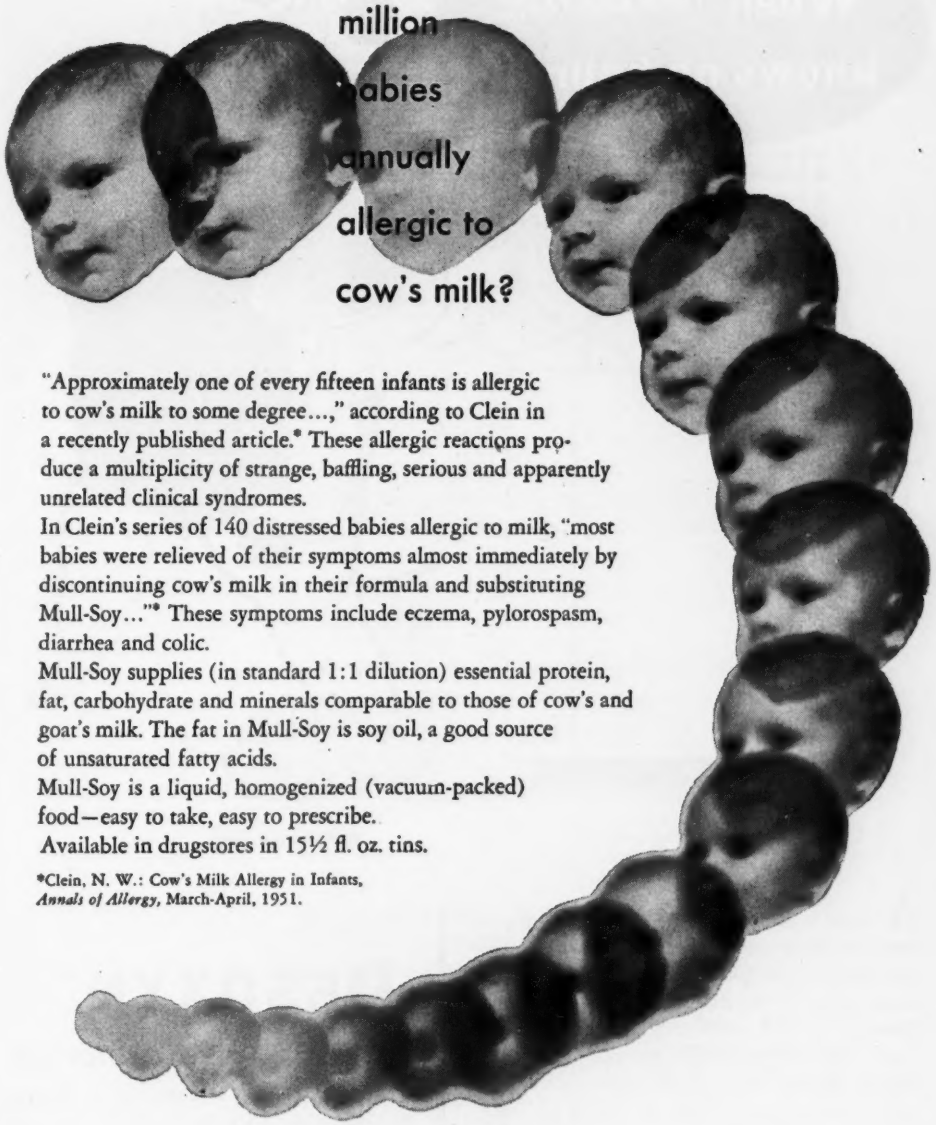
REFERENCES:

1. Bicknell, F. and Prescott, F.: The Vitamins in Medicine, 2nd ed., Heinemann, 1948.
2. Dunnigan, W. M. et al: Ohio J. Sc. 44:125, 1944.
3. Ivy, A. C. et al: Peptic Ulcer, Blakiston, 1950.
4. Jeans, P. C. and Marriott, W. McK.: Infant Nutrition, Mosby, 1947.
5. Jolliffe, N. et al, ed.: Clinical Nutrition, F. B. Hoeber, 1950.
6. McLester, J. S.: Nutrition and Diet in Health & Disease, 4th ed., Saunders, 1944.
7. Sherman, H. C.: Chemistry of Food and Nutrition, 7th ed., Macmillan, 1946.
8. Spies, T. D.: J.A.M.A. 122:497, 1943.

almost a quarter million babies annually allergic to cow's milk?



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*Clein, N. W.: Cow's Milk Allergy in Infants, *Annals of Allergy*, March-April, 1951.

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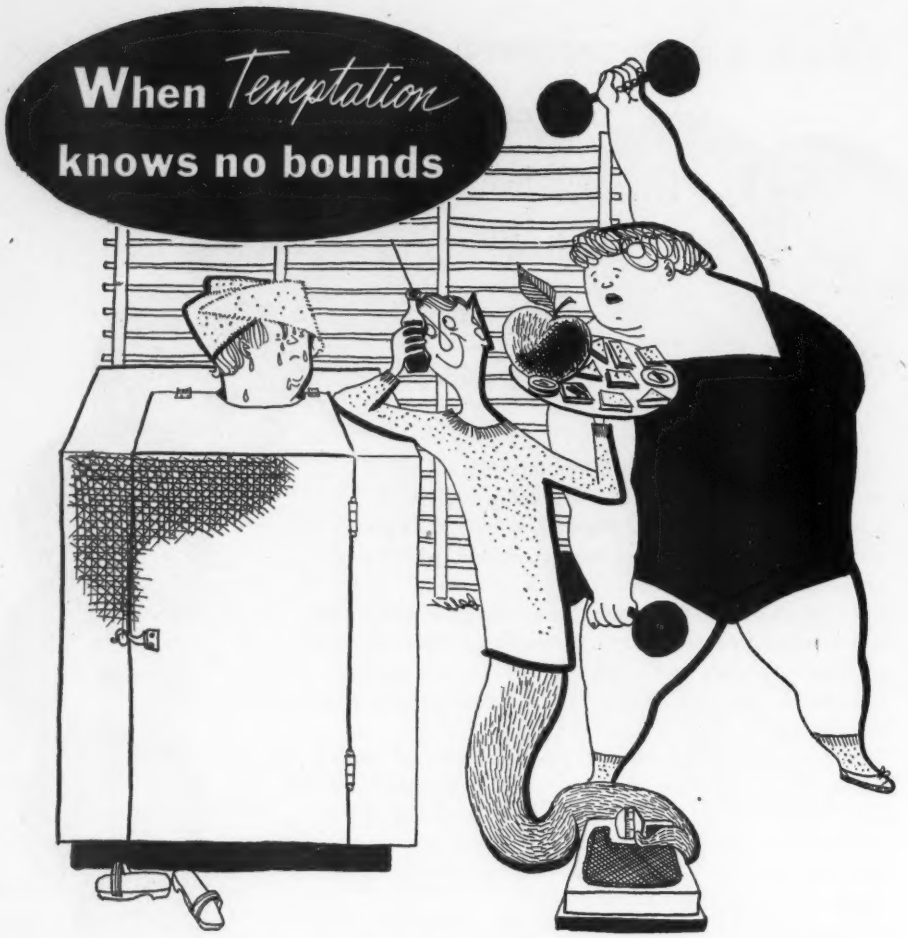

A valuable adjunct to the dietary regimen is DESOXYN Hydrochloride—to dull the sensation of hunger, buoy the spirits, help make the patient a better match for temptation. Weight for weight, DESOXYN is more potent than other sympathomimetic amines so that *smaller doses* can produce the desired anorexia. With the recommended dosage there is *seldom any side-effect* or feeling of "drug stimulation." One 2.5-mg. or 5-mg. tablet before breakfast and another about an hour before lunch are usually sufficient. In addition, DESOXYN has a *faster action, longer effect.* Try it—in obesity and in other conditions indicating an effective central stimulant.

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for the treatment of ventricular arrhythmias

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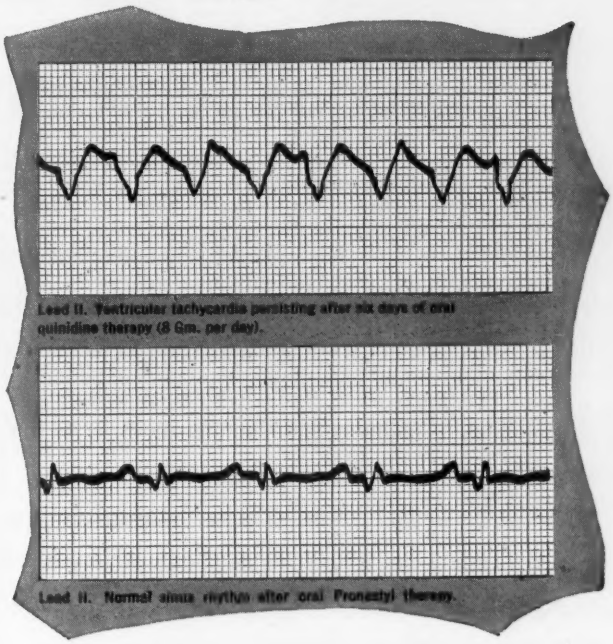

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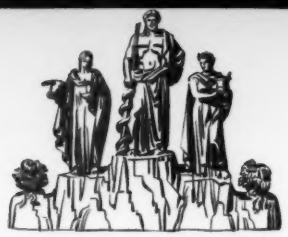

Below the Rio Grande

LILLY SINCE 1876

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Acute Anesthetic Emergencies

Paul H. Lorhan, M.D., and E. Metz Wright, Jr., M.D.
Kansas City, Kansas

Acute emergencies arising during the course of anesthetic and operative procedures are of paramount importance to the members of the surgical team, and often demand rapid interpretation and instantaneous intervention to forestall an unfavorable outcome.

The physiological processes, both normal and altered by the anesthetic and surgical procedures, are a closely integrated aggregate and may be discussed from a systemic viewpoint only by keeping in mind their inter-reliance upon each other. However, for practical purposes we shall attempt to classify acute anesthetic emergencies according to the system predominantly affected.

The effects of anesthetic agents upon the respiratory system are primarily concerned with the transalveolar exchange of gases which are controlled by physical laws.

Ninety-nine per cent of anesthetic fatalities are due to some interference with the efficiency of the respiratory and circulatory systems causing a deficiency in oxygenation.[1] Any condition which interferes with insufficient diffusion of gases across the aveolar membrane will lead to an inefficiency of the respiratory cycle and alterations in respiratory physiology. These changes may be of an acute nature or may be insidious in onset and terminate in an acute respiratory collapse.

Respiratory depression results in an interference of the ability of the body to produce the necessary interpulmonic pressure changes to cause a flow of gases from the atmosphere to the alveoli. The decreased diaphragmatic and intercostal activity and the rapid onset of cyanosis make the diagnosis of this condition obvious. The most common cause of this condition is overdosage of the anesthetic agent, particularly with the rapid acting agents, in an attempt to satisfy an impatient surgeon. Since individual tolerance to drugs is such a variable entity, it is imperative that each patient be meticulously observed during induction until this tolerance can be accurately determined.

Alterations in the ability of the thorax to expand and produce a negative intrapleural pressure will result in the same physiological phenomenon. This may be seen in diaphragmatic and intercostal paralysis coincident to high spinal analgesia, pneumothorax and mediastinal shift during chest surgery, paradoxical respiration, or constricting surgical dressings or casts.

The immediate treatment of this condition consists of supplying an adequate amount of oxygen to the alveolar membrane. This is most easily accomplished by rhythmical manual compression of the bag of the gas machine delivering 100 per cent oxygen, or by means of mechanical[2, 3] or electrophrenic respirators.[4] This will be sufficient in the vast majority of cases to maintain respiratory function until the drug is dissipated or metabolized or until the pressure alterations can be corrected. It is important that positive pressure be diminished to zero on the expiratory phase of respiration to prevent interference with alveolar circulation, venous return to the right heart and the fatigue associated with efforts to exhale against positive pressure.

This complication is obviated by use of a positive-negative mechanical respirator or the electrophrenic respirator which has been effective in increasing cardiac output and elevating blood pressure in experimental animals with high spinal analgesia. Reinstitution of effective respiratory effort may then be accomplished by the administration of counter-depressants, prostigmine in the case of curare overdosage, analeptics (i.e. metrazol) for pentothal depression, and correction of the physical imbalances.

The other most common cause of decreased alveolar oxygen is mechanical obstruction. This may occur at any point between the alveolar membrane and the oxygen supply, whether it be the atmosphere

or the oxygen tank. In contradistinction to respiratory depression, the anesthesiologist is presented with the syndrome of increased respiratory effort, abnormal respiratory sounds if the obstruction is incomplete, and decreased or absent excursions of the breathing bag.

Obstruction of the upper respiratory passages is usually caused by faulty position, lingual relaxation, enlarged tonsils or adenoids or intrapharyngeal tumors or foreign bodies. Removal of the foreign body, gum, displaced dentures or vomitus and insertion of a nasopharyngeal or oropharyngeal airway will correct this condition.

The physical and emotional stress of labor or acute traumatic conditions may impede gastric motility to such an extent that food may remain in the stomach for as long as 12 hours.[5] In such conditions where anesthesia is contemplated, it is well to prevent post-emetic aspiration by emptying the stomach by induced emesis or gastric lavage. If vomiting occurs during induction the anesthesia must be discontinued until the patient recovers enough to clear the trachea by coughing; Trendelenburg position and mechanical aspiration are then performed.[6] This should be followed by reinstitution of anesthesia, endotracheal intubation and catheter aspiration of the trachea. At the termination of surgery the patient should be bronchoscoped to insure bronchial patency.

The presence of vomitus, mucus or blood on the vocal cords may precipitate varying degrees of laryngospasm, especially during the use of parasympathomimetic agents.[7] Aspiration of the larynx, positive pressure on the breathing bag for a few breaths and deepening of the anesthesia will usually overcome the spasm. If this is not successful topical application of cocaine, either transorally or transepiglottically, and endotracheal intubation may be resorted to.

The sudden gravitational movement of large quantities of pus into the trachea from a bronchiectatic lung which is uppermost in a patient placed in the lateral position for lobectomy may cause a blockage of the airway.[8] In such cases immediate aspiration will usually relieve the obstruction. The use of preliminary postural drainage,[9] preoperative bronchoscopy and endobronchial intubation will seal off the intact lung and prevent the patient drowning himself.

Bronchospasm is fortunately a relatively rare occurrence and presents a picture similar to an acute asthmatic attack, which may be the underlying cause. Deaths have been reported in what appeared to be a bronchospastic or atelectatic condition which was attributed to curare reaction or overdosage.[10] The use of (11) 70-30 helium-oxygen mixtures will increase the ability of the gases to pass through the constricted bronchi. Administration of intravenous antihistaminics and the change to ether may be beneficial. In patients with a history of asthma it is well to avoid the parasympathetic agents and include antihistaminics in the preoperative medication.

Inability of alveolar oxygen to cross the membrane, due to alterations of permeability, may prevent oxygenation of alveolar blood. This may be the result of pulmonary edema or alveolar impermeability from exposure to toxic gases. Aspiration of excess fluid and administration of oxygen under intermittent positive pressure will raise alveolar oxygen tension, relieve hypoxia of the alveolar membrane and help to restore alveolar permeability.[12]

The appearance of circulatory complications during anesthesia are often sudden and dramatic in onset. Arterial hypotension may be due to primary, secondary or vasogenic shock. Primary shock is associated with a rapid increase in size of the vascular bed, from sympathetic paralysis or from reflex neurogenic stimuli, and is most effectively treated with various vasopressors, among which intravenous methedrine in 5 to 10 mg. is the most effective. Prophylactic administration of methedrine is effective in preventing the hypotension seen following spinal analgesia.[13]

Secondary shock is most satisfactorily treated by replacing the type of fluid that has been lost.[14] In cases of massive hemorrhage intra-arterial transfusion under pressure may be life-saving. Losses of large amounts of serum or dehydration are effectively corrected by plasma and fluid administration. The alterations associated with the abnormal capillary permeability of vasogenic shock may be improved by the administration of adrenal cortex extract.[14]

Continuous electrocardiographic tracings or direct reading oscillometric electrocardiography have demonstrated a much higher incidence of cardiac irregularities than is evident from clinical observation.[15] This is especially true during endotracheal intubation[16, 17] and extubation.[18] The majority of the arrhythmias are transitory and inconsequential and may usually be corrected or prevented by the intravenous administration of procaine,[17, 19] pronestyl,[20] or quinidine.[21] However, should cardiac irritability continue to increase an acute cardiac emergency may be precipitated.

Sudden cessation of effective cardiac function will usually be evident first to the anesthesiologist, especially if continuous palpation of the pulse or continuous E.K.G. observations are being made. Ar-

rest may occur at any depth of anesthesia for any type of operative procedure and may even occur under spinal or local analgesia. The clinical picture is pathognomonic and is characterized by the staring expression, the relaxed jaws, fixed pupils, grayish pallor and mottling of the skin. If the operative procedure is in process the clinical impression may be verified by having the surgeon palpate the heart or great vessels directly.

The etiological factors concerned are (1) idiosyncrasy to the anesthetic drug, (2) ventricular fibrillation, or (3) vagovagal reflex.[22] Chloroform, ether, cyclopropane and ethyl chloride are particularly important in the first category and may be especially dangerous if associated with hypoxia and excitement.[23] The reduction of excitement by adequate premedication, prevention of suboxygenation during induction and maintenance of anesthesia, and elimination of reflex stimuli by local or topical anesthesia and atropine, are important prophylactic measures. Adequate oxygenation of the tissues is dependent upon both respiration and circulation, and each must be maintained to provide oxygen to the cells; however, in cardiac arrest restoration of the latter is of primary concern since the blood will give up increased amounts of oxygen depending upon tissue demand as long as circulation is maintained.

Once the diagnosis of cardiac arrest has been made, a preconceived plan of action is mandatory if successful restoration of cardiac function is to be anticipated. Any program which does not include cardiac massage will result in a high percentage of failures. Even when the condition is recognized early and a well conceived plan is promptly and boldly instituted, more than 50 per cent of these cases will result in fatality.[24]

The use of cardiac stimulants is time consuming and does nothing more than sensitize an already excitable heart.[25] Epinephrine alone will never revive a stopped heart.[26] The value of drug therapy is only to support the mainstay of cardiac resuscitation, cardiac massage.

Manual massage of the heart is the method of choice in cardiac resuscitation, and its chance for complete success without mental deterioration is directly dependent upon the interval of time between cessation of cardiac action and institution of massage and probably is between three and one-half and seven minutes. The patient's chances of survival depend directly upon the ability of the surgical team to respond with alacrity to the situation.

Cardiac massage is necessary to give mechanical stimulus to the heart, empty the heart chambers, maintain cerebral and coronary flow and increase cardiac tonus. By effective cardiac massage a systolic pressure of 60-70 mm. Hg. can be produced.[27] A complete set of instruments for thoracotomy must be immediately available, additional personnel must be available to act as timekeeper, prepare drugs, supervise administration of fluids and assist the anesthesiologist in maintaining pulmonary ventilation by endotracheal intubation and controlled respiration. Artificially controlled respiration not only rests the respiratory muscles, but decreases their oxygen requirements.[28] The surgical team must be previously instructed in the proper operative procedure.

The approach to cardiac massage may be transabdominal, transabdominal-transdiaphragmatic or transthoracic, of which the latter is much the most efficient, but which depends to a certain degree upon the type of operation and the apparent effectiveness of the massage. The stimulation of grasping or cutting the skin has been reported to reinstitute cardiac action.[29]

Upon opening the chest the heart is immediately massaged for two to three minutes through the pericardium to establish an immediate artificial circulation.[25] The pericardium is then opened and direct massage performed by grasping the heart with the fingers posterior and anterior at a rate of 40 to 50 times per minute with complete relaxation between compression to allow for adequate filling, and with occasional rest periods to allow the heart opportunity to resume normal spontaneous rhythm. If the beat becomes progressively weaker with cessation of massage, the intraventricular and intramural injection of 10 cc. of 1:10,000 adrenalin after first desensitizing the heart with five cc. of two per cent procaine injected into the right auricle and diffused by massage may improve cardiac contractions. The intrapericardial injection of procaine, pronestyl, cocaine or metycaine may also be beneficial.

The presence of ventricular fibrillation may persist and require serial defibrillation by means of electrical stimulation which will cause a total response of the muscle fibers and coincidental occurrence of their refractory periods so that a synchronous response to the next normal stimulus may be elicited. Two sterile padded electrodes, one anterior and one posterior, are applied to the heart, and an electrical current of one to one and one-half amperes, through a 60 cycle alternating current, is applied for 0.1 to 0.5 second. Several stimuli may be necessary and if cardiac action does not respond, five cc. of one per cent calcium chloride solution injected intramurally into the right ventricle may re-establish myocardial tone and contractility.

Acute vascular phenomena such as cerebral or coronary occlusion or hemorrhage rarely complicate

surgical and anesthetic procedures, but may be dramatic in their effects if they do occur. Cerebral accidents under general anesthesia may occur from sudden increases in blood pressure and may be manifested only by changes in pupillary fixation and dilatation. Under spinal analgesia in a hypertensive patient, the sudden appearance of coma, flaccidity of the upper extremities and loss of corneal and light reflexes may indicate cerebral vascular accidents. Coronary occlusion may show only the signs of acute failure under general anesthesia, but may present the typical picture of precordial pain, dyspnea and hypotension with spinal analgesia. The diagnosis of either of these conditions, when possible, prompts immediate cessation of surgery and anesthesia and institution of proper supportive therapy.

Acute anesthetic emergencies relating to the nervous system are usually in the form of increased stimulation of the central nervous system since autonomic results are usually manifested by their effects upon respiration and circulation. The most important condition is the appearance of convulsions which may be preceded by muscular twitchings. Certain types of patients seem to have a peculiar predilection to convulsions and in some instances have been found to have electroencephalographic changes similar to those seen in epilepsy.[30]

Certain pathological states predispose to convulsions. Among these are alkalosis, anoxemia, hyperpyrexia, azotemia and intoxication with drugs of a convulsant nature. Ether is the principal offender, but convulsions have occurred with cyclopropane,[31] chloroform,[32] nitrous oxide,[33] ethyl chloride,[34] vinethene and ethylene.[35] The usual occurrence is in young patients with sepsis or toxemia,[36] a high exogenous or endogenous temperature with hypercapnea from elevated metabolic activity.[37] The convulsive state is dangerous, respiration is suspended, and the subsequent cerebral anoxia predisposed to propagate the convulsive seizure. Administration of intravenous barbitrate, cessation of ether, and correction of hyperpyrexia will control the seizure, and pulmonary ventilation must be controlled by the necessary means.

Emergencies occurring in the immediate postoperative period may be more carefully controlled by the utilization of a postanesthesia recovery room with adequate nursing personnel especially trained to interpret unusual signs and symptoms peculiar to emergence from anesthesia and with the necessary equipment for rapid treatment should complications arise.[38]

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An Abstract on New Growths of the Skin and Their Management

Charles C. Dennie, M.D.,* and Donald L. Fuhrman, M.D.**

Kansas City, Kansas

I. *Dermatoses Which May Become Malignant*—Vary from a fraction of one per cent to a maximum of about five per cent:

(1) Nevi
(2) Lentigines
(3) Syphilitic ulcers
(4) Tuberculosis ulcers
(5) Stasis ulcers
(6) Psoriasis
(7) Lupus vulgaris
(8) Lupus erythematosus
(9) Seborrheic keratoses
(10) Sebaceous cysts
(11) Epithelial cysts
(12) Burn scars

II. *Precancerous Dermatoses*—Based on clinical, statistical, and histopathological concepts. In 20 per cent or more of these conditions an epithelioma eventually develops. It is usually squamous cell in type and begins as a squamous cell carcinoma in situ. Clinically, these lesions must be differentiated from superficial epitheliomas:

(1) Bowen's precancerous dermatoses
(2) Senile keratoses and solar keratoses
(3) Keratoses resulting from ingestion of arsenic
(4) Keratoses resulting from exposure to tars
(5) Keratoses resulting from radiotherapy
(6) Leukoplakia, including kraurosis
  (a) Kraurosis penis
  (b) Erythroplasia of Queyrat

III. *Cancerous Dermatoses*—

(1) Xeroderma pigmentosum
(2) Basal cell epithelioma
(3) Superficial epitheliomatosis
(4) Baso-squamous cell epithelioma
(5) Squamous cell epithelioma
(6) Melano-epithelioma
(7) Paget's disease
(8) Metastatic carcinoma
(9) Sarcoma cutis
(10) Multiple idiopathic hemorrhagic sarcoma

I. *Dermatoses Which May Become Malignant*

1. *Nevi (Moles)*: Moles are to be distinguished between epidermal, dermal, or junction type, the latter of which may terminate in melano-epithelioma, and the intradermal nevus which is benign, according to Traub.[1] However, it has been our experience, and that of others, that any of these can terminate in melano-epithelioma. Furthermore, there are combinations and transitions between these types.

Morphologically, distinction is not always easy between ephelis (freckles), lentigines, the so-called hard nevi of Unna, and the early flat pigmented nevi; consequently, a biopsy is always indicated. Depending upon their histological structure, according to Traub,[1] they are classified as follows:

A. *Intra-epidermal nevus*

a. Nevus verrucosus (hard warty nevus)
b. Nevus verrucosus linearis (line of warty nevi)

B. *Intradermal nevus*

a. Verruca mollis (the "common mole")
b. Nevus papillomatosus
c. Lentigines
d. Nevus pigmentosus et verrucosus (soft warty pigmented mark)
e. Nevus pigmentosus et pilosus (pigmented mark with hair)
f. Nevus pigmentosus et pilosus et verrucosus (combination of pigmented, hairy, and soft warty mark.)

C. *Junction or borderline nevus*

a. Nevus spilus (smooth flat pigmented spot)
b. Nevus pigmentosus
c. Nevus lentigines
  (e) Superficial
  (b) Deep

D. *Combination type nevus*

Histologically, it is a combination of one or more of the types mentioned. Clinically, it assumes the characteristics of one or several of the previously mentioned varieties.

E. *Blue Nevus*

This fortunately is a histologic designation. Clinically, the lesion is often mistaken for a slate-black mole (malignant melanoma).

Histologically:

(1) Intra-epidermal nevi lie entirely with the

*Professor of Dermatology, University of Kansas School of Medicine.
**Instructor of Dermatology, University of Kansas School of Medicine.

epidermis and present a proliferation of normal epithelial cells, a mixture of prickle and basal cell type, not referred to as nevus cells. They may or may not be pigmented. They rarely terminate in cancer.

(2) Intradermal nevi are probably the most frequently encountered lesions and are characterized by the occurrence of nevus cells arranged intracutaneously in nests and strands. The cells are of the mature type, and to become malignant they revert to the embryonic type. Pigment is usually present in varying amounts. Cancer rarely, if ever, occurs.

(3) In the junction type nevus, the process may be interpreted as hyperpigmentary due to an increased number of melanoblasts at the epidermodermal junction. The cells are not separated from the epidermis as in the intradermal nevi where the nevus cells are seen in nests or strands, usually detached from the epidermis. The cells in this type are of the embryonic (anaplastic) type, and the lesion constitutes the forerunner of the malignant neoplasm. It is the lesion we prefer to call the potential malignant melanoma.

2. *Lentigines:* These must be distinguished from freckles, but lentigines occur later in life and are seen on the genitalia, thighs, and trunk. Lentigo maligna usually terminates in melano-epithelioma.

3. *Syphilitic ulcers:*

4. *Tuberculosis ulcers:*

5. *Stasis ulcers:* No statistics are available concerning the percentage of malignancies occurring in these lesions; however, it would be between one per cent and five per cent.

6. *Burns:* Vary from a fraction of one per cent to a maximum of about six per cent.

7. *Lupus Vulgaris:* Many complications of lupus vulgaris are known, and high on the list are carcinomas. They occur as a sequel in from one-half per cent to two per cent of the cases. Sarcomas may also occur after actinodermatitis, or independently. Cutaneous horns occasionally develop on a patch of lupus.

8. *Seborrheic Keratoses:* Because, morphologically, these lesions are so frequently mistaken for moles, melanomas, or basal cell carcinomas by the profession, or just "cancers" by many patients, these lesions are described in detail.

The most common sites for occurrence of seborrheic keratoses are the templar and forehead areas, the back, and the chest. The lesions may occur on any part of the face, and in some instances are seen all over the body.

They vary in size from about five mm. to two cm., and in color from a light yellowish brown to black. The lesions are greasy in feel and can usually be scraped off the skin with any sharp instrument. A clinical diagnosis is usually readily made, but is oftentimes incorrect, as the lesion is often confused with nevus pigmentosus, melano-epithelioma, or blue nevus, because of the deep brown or even bluish-brown color when developed. By observing the small black plugs in the lesions, the distinction can be made.

Seborrheic keratoses are easily treated and can be eradicated with minimal scarring by freezing with carbon dioxide ice, electro-desiccation, and other mild destructive measures.

9. *Sebaceous Cysts:* The rare occurrence of malignant change arising in elderly people is to be remembered.

II. *Precancerous Dermatoses*

1. *Bowen's Disease*: Bowen's precancerous dermatoses are really cancers in situ (squamous cell carcinoma in situ). The pathological changes seen in Bowen's disease are also seen in all types of precancerous dermatoses, including the squamous cell epithelioma, in situ, of the mucous membrane and genitalia; however, they do not have the clinical features of Bowen's disease. Also, distinction must be made between the cells of Paget seen in Paget's disease of the nipple and the cells of Bowen.

The term, Bowen's disease, should be confined to lesions which simulate a nodular ulcerative syphiloderma with an acriform configuration. It is a plaque covered with a varied depth of epidermis and may become ulcerated. There is usually peripheral extension and central involution. The disease usually persists for years without extension, but many cases have been reported in which squamous cell epithelioma eventually developed metastasis and death resulted.

2. *Senile Keratoses:* Upon rubbing the finger over a senile keratosis it feels like a small piece of gravel. In other words, it is a hard area of hyperkeratosis.

These lesions occur in people past middle life and are seen usually over the temples and other parts of the face, the sides of the neck, and over the dorsal surfaces of the hands. They are yellowish brown to dark brown in color.

Senile keratoses are most commonly seen in individuals with blonde or red hair, and in persons with skin known as sailor's or farmer's skin. We make no distinction between solar keratoses, resulting from the sun, or senile keratoses, because both are predisposed by the sunlight.

An early sign of malignant degeneration in a senile keratosis is the formation of an indurated

area surrounding the base. Later signs of cancerous degeneration are erosion, ulceration, or a change to a very friable tissue with increased vascularity. Of course, histological examination is the only positive proof of malignant change.

Every senile keratosis should be destroyed. There are many acceptable treatments—surgical excision, cryotherapy, electro-desiccation, and currettement. Currettement is an excellent method of therapy, and the one of choice in many instances.

3. *Arsenical Keratoses:* A history of arsenical ingestion in the years past, usually for over a long period of time, is not always obtained, because the patient may not know he has ingested the drug. The form of arsenic is usually one of the inorganic salts such as Fowler's solution. The organic salts rarely produce these lesions.

These appear as thick, wart-like, flat-topped, lesions on the palms and soles. They are multiple, bilateral, and sometimes closely set. On palpation, they are resistant to movement.

Hyperpigmented patches or freckling on the face, on the sides of the neck, or on the body, may also appear. Epitheliomas developing in these lesions are squamous cell in type. These are a resistant type of cancer and should be surgically excised. They are usually radioresistant.

4. *Keratoses Resulting From Exposure to Certain Tars:* It has been recognized for many years that certain tars will produce malignant changes in the skin after body contact.

5. *Keratoses Resulting From Roentgen or Radiotherapy:* This group would be more correctly labeled chronic radiodermatitis, because keratoses are only one morphological group of lesions which develop in persons who come in contact with roentgen and radium rays.

Chronic radiodermatitis occurs on the hands and sometimes on the faces of persons administering roentgen rays, or who have had the rays administered therapeutically. It is manifested by a scarring, atrophy, obliteration of the normal lines of the skin, telangiectasia, alopecia, longitudinal striations, and sometimes loss of the nails. Frequently, only after many years have passed, do ulcers and keratoses develop. Epitheliomas develop in about 20 per cent of the cases in which the damage is greater than just a simple telangiectasia, according to Montgomery.[2]

6. *Leukoplakia:* Leukoplakia is seen most often on the lower lip and buccal mucosa, less frequently on the tongue, and occasionally on the vagina. If the vagina is involved, the lesion may accompany kraurosis vulvae in the advanced stage. If the penis is involved, the term "kraurosis penis" is applied.

Erythroplasia of Queyrat occurs on the glans, on the prepuce, and on the vulva, as well as on the buccal mucosa. This condition has been described by some authors as simply an early moist stage of leukoplakia.

The earliest lesion of leukoplakia is a snow-white or bluish-white patch. In the mouth it must be differentiated from monilia, lichen planus, lupus erythematosus, herpes simplex, and malignant changes. Monilia can be ruled out by means of cultures; and, of course, a biopsy will be helpful in the other diseases.

Early lesions may be reversible; that is, upon removal of the irritant, the most important of which is tobacco, the leukoplakia may disappear. Other factors are ill-fitting dentures and poor oral hygiene. Individuals who have syphilis have a high incidence of leukoplakia, and therefore this disease must be ruled out.

The management of leukoplakia is important. The source of the etiology should be obtained and removed. Usually, the thick verrucous lesions do not disappear, even when all sources of irritation are removed, and the physician must decide whether to treat the lesion or follow conservative measures. In our office, we usually choose to treat the lesions, usually by some destructive measure as cautery.

III. *Cancerous Dermatoses*

1. *Xeroderma Pigmentosa:* This is a rare disease which begins in childhood, characterized by hyperpigmentation, atrophic areas, telangiectasia, warty and malignant growths.

When the child is first placed out in the sun, the early lesions become manifest. It may follow sunburn. The early lesions resemble freckles and are usually noticed on the face or exposed portions of the body, later developing on other areas of the bdoy. As the disease progresses, telangiectasia, angiomata, atrophic areas, and warty growths of different character, occur. They may be flat or convex and very much resemble verrucous lesions seen in old age. At a later date, malignant changes occur and various types of neoplasms develop, the most common of which is basal cell epithelioma, and less frequently, squamous cell carcinoma. Melano-epitheliomas, sarcomas, and even endotheliomas have been reported.

2. *Basal Cell Epithelioma:* Jacob, in 1827, described these lesions which are frequently called "rodent ulcer."

Basal cell epitheliomas usually begin as a small, pinhead-to-pea-sized, pearly nodule which may gradually enlarge. This eventually will ulcerate. A typical lesion is characterized by a chronic, relatively slow and progressing ulcer, with a rolled, pearly, telangiectatic border, covered in the center

with a brownish crust, which, when removed, bleeds easily. Basal cell epitheliomas are locally malignant. They do not metastasize as such when metastasis occurs. It means they have changed to transitional types.

Basal cell epitheliomas are usually easy to eradicate, and treatment of various types can be employed, including roentgen or radium therapy, simple excision, cauterization, and various electro-surgical methods.

Whenever possible, it is preferable to take a small specimen for biopsy in order to be sure you have made the correct clinical diagnosis, and a biopsy is a MUST for all patients who fail to respond promptly to treatment and for any patient who has a recurrence.

3. *Superficial Epitheliomatosis (Erythematoid benign epithelioma):* These lesions are often missed because they may look just like any ordinary, dry, scaly, eczematoid patch; but upon closer observation, these superficial scaly plaques have a very fine thread-like, elevated, pearly border which may be so minute as to escape recognition unless viewed with a hand lens. These plaques may vary in size from a few centimeters to areas as large as the palm. These lesions are usually solitary, but sometimes do occur in larger numbers, even as many as 100.

These lesions must be differentiated from psoriasis, lupus erythematosus, tinea circinata, types of eczema, extra-mammary Paget's disease, and arsenic epithelioma.

These lesions are usually radio resistant, and a destructive measure such as carbon dioxide snow is the treatment of choice.

IV. *Basal Squamous Cell Epithelioma (Transitional epithelioma)*

Montgomery states, "In a series of basal cell epitheliomas diagnosed clinically as such, in from 15 to 20 per cent of the cases, upon microscopic examination, tissue will be proved to be transitional, or, basal squamous cell epitheliomas.

Histologically, these cancers represent a change to the squamous cell type and are not degenerate forms of the basal cell; consequently, these lesions are more difficult to treat and the prognosis is changed, the prognosis now being that of a squamous cell epithelioma, and more specifically, that of a Grade II squamous cell epithelioma.

Baso-squamous lesions are found most frequently on the cheeks, eyelids, nose, forehead, ears, scalp, and canthi of the eyes. They may also be found on the mucous membranes.

The lesions begin as discrete nodules or ulcers, and grow quite rapidly.

Histologically, there is a proliferation of tumor cells consisting of dark-staining basal cells, and lighter staining intermediary and prickle cells, together with partial pearl formation, and parakeratotic and colloidal rather than a horny center.

Baso-squamous cell epitheliomas are relatively radioresistant and are best treated by wide surgical excision or by electro-surgery of various types.

V. *Squamous Cell Epitheliomas*

These tumors are found most frequently on the exposed surface of the body of elderly persons, often times in relation with senile keratoses and senile cutaneous changes. Practically all epitheliomas of the mucous membrane of the mouth, nasopharynx, and genitalia are squamous cell epitheliomas.

Squamous cell epitheliomas are most frequently found on the lower lip. Lesions develop chiefly among farmers and others exposed to the elements, and among heavy smokers. They develop from portions of leukoplakia buccals or leukoplakic vulvitis. Lesions may be found anywhere on the skin, but more typically develop on the cheek, ears, nose, upper extremities, and on the forehead. The lesions are usually crateriform ulcers with a wide, rolled, pearly border, the latter being wider and more indurated than that of the basal cell epithelioma. They may vary widely in clinical morphology, and are frequently verrucous, papillomatous, or fungoid lesions, as well as cauliflower-like growths.

The typical squamous cell epithelioma usually is readily recognized, but in many cases it may simulate the basal cell epithelioma or the chronic granuloma. When the diagnosis is questionable, a biopsy is taken and the diagnosis is made under the microscope.

The most important part of the therapy, whatever method may be employed, is to destroy the squamous cell epithelioma completely, because of the danger of recurrence, often with increased malignancy and being more difficult to treat, or the subsequent development of metastasis.

There is no uniform agreement among physicians concerning the treatment of these lesions. Radiotherapy, surgery, and electro-surgery, are the methods employed.

VI. *Melano-Epithelioma*

Melano-epitheliomas usually begin as a blue-black or steel-blue nodule; occasionally, they are light brown in color. The early lesion may be flat and level with the skin, or it may be elevated. It may be fungoid or ulcerated. Early in the course of the disease, metastasis occurs. It is the most malignant and rapidly fatal of all cutaneous neoplasms. Metastasis may appear in the adjacent lymph nodes, but frequently these escape, and the first evidence of metastasis may be found in any of the internal organs.

Melano-epitheliomas develop at any age from six months onward, the average age of onset being 50 years. They occur on the exposed surfaces, on the extremities, particularly the feet, and on the face. Some authors place a history of trauma or injury in 20 to 30 per cent of their series of cases. Eve[2] reported on lesions which he called implantation melanomas, because months or years after a puncture wound of the palm or sole, melano-epitheliomas developed. All inflammatory whitlow should be examined closely for streaks which are grayish black, because it may be melanotic whitlow.

Melano-epithelioma is to be distinguished from blue nevus, pigmented basal cell epitheliomas, deeply pigmented benign nevus, senile keratosis, and seborrheic keratosis.

Any pigmented nevus that is subject to repeated trauma and irritation, or where there is a history of increase in size, should be removed by wide surgical excision.

In general, a favorable prognosis in melano-epithelioma is dependent upon its recognition at the earliest stages of the disease.

VII. *Paget's Disease*

As a rule, Paget's disease occurs on the breast, among women, although it is seen among men. The process begins with erythema and scaling which involves the areola and nipple. The surface becomes very red, often eczematoid, with weeping and oozing not unusual. The area gradually becomes indurated and infiltrated. There may or may not be retraction of the nipple. The condition may remain as such for many years without any palpable evidence of an underlying carcinoma of the breast. In most cases, however, carcinomatous infiltration occurs early and rapidly.

Just a word about the pathology. In typical Paget's disease, large, pale-staining cells are scattered throughout the epidermis. These cells have large, light-colored, vesicular nuclei, and are pale-staining, lying free in the epidermis without evidence of intercellular bridges. These cells are found in the epidermis of the walls of hair follicles and in lactiferous ducts.

VIII. *Metastatic Carcinoma*

Cutaneous metastasis may result from carcinoma situated anywhere in the body and may occur at any age, but usually late in life.

Metastasis may reach the skin by (1) direct invasion from subadjacent tumors such as direct extension through the abdominal wall from carcinoma of the gall bladder, or into the skin from a hypernephroma; (2) direct extension through the lymphatics as exemplified by carcinoma en curasse, or dissemination with involvement of the lymph nodes; and (3) dissemination through the blood stream as occurs in many types of cutaneous metastasis.

IX. *Sarcoma Cutis*

The classification of cutaneous sarcoma varies, and there is no uniform agreement as to the tumors which belong in this group. Most authors do not recognize malignant endothelioma. So-called endothelioma capitas of Spiegler should be classed with benign epithelioma. Sarcomatous changes in neurofibroma are discussed under that subject. Spiegler-Fendt sarcoid and lymphosarcoma are considered with the lymphoblastomas. Melanosarcomas are discussed with lymphoblastoma.

Kaposi's sarcoma will be taken up next because of its distinctive features.

Sarcoma cutis includes many tumors of the angiomatous, fibromatous, myxomatous, etc., occurring as primary tumors of the skin; also, they may occur secondarily as the result of other dermatoses, either independently of, or after, radiotherapy.

True sarcoma of the skin is rare as compared to various types of epitheliomas.

The clinical picture of solitary sarcomas of the skin is not diagnostic and can be simulated by many conditions as hemangiomas, granuloma pyogenicum, gummas, and deep mycotic infections such as Kerion Celsi.

X. *Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi*

The disease is most common in the later decades of life, with lesions usually beginning on the hands and feet. Kaposi originally described the early lesions as reddish-brown or bluish-red nodules, varying in size from that of a pinhead to that of a pea or bean, which soon grow into visible nodules. Because of the marked infiltration and multiplication of the lesions, elephantiasis may result. The course of the disease is slow, and death generally is the result of intercurrent infection. The etiology of the disease is unknown.

Histologically:

The first change is the hemorrhage in the cutis from one or more vessels. Other vessels become dilated and engorged and there is a deposit of hemosiderin. The infiltrate shortly follows, apparently arising from the walls of the blood vessels, which includes lymphocytes, plasma cells, and mast cells. Finally metastatic figures are seen, and the elastic tissue and the dermal appendages are destroyed by the infiltrate.

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Personalized Pre-Partum Care*

John H. Moore, M.D.**

Grand Forks, North Dakota

It has been my good fortune to have met with many of you on several occasions at the University of Kansas Medical Center, one of the truly great medical teaching centers in this country. It is always a pleasure to return to Kansas and meet with Kansas physicians. I learn far more than I am able to impart. You have a rural medical problem and the problem of medical education in a rural state. You are doing something positive about both. We have similar problems in North Dakota and we are learning much from you.

This talk on personalized pre-partum care will not be a didactic presentation of standardized procedures. These, I suppose, could be obtained from bulletins of the Children's Bureau or compiled from any standard textbook on obstetrics. Rather, I hope to bring a philosophic approach to my subject because I believe it has a most important bearing upon what we like to think of as the American way of private medical practice. I have heard rumors to the effect that this way of practice has been attacked!

Over the years we have had the charges leveled at us that we are too self-centered, that affairs of community, state and nation find us self-sufficient and detached. Any thoughtful individual knows that such is not the case. History records no finer contributions to human betterment than those supplied by American men and women of medicine.

We are individualists. God grant that we shall always remain so! The chief reason why the world finds itself in such a mess today is that it has, to a large extent, forgotten the sermon on the mount. Read again the fifth, sixth and seventh chapters of St. Matthew's gospel and you will find that, while Christ spoke to the multitude, this represented individualism at its finest. It is a return to an understanding of the needs of the individual and a helpful, sympathetic and personal attempt to meet those needs that today present the greatest challenge and the greatest opportunity to the American physician. Those who would destroy us as a free profession and make us the servants of a bureaucratic and socialistic state never mention the individual. It is always a mass of statistics, largely false, and the appeal to mass and class consciousness that is used against us.

Unwittingly, I hope, some of our supposed allies in the field of health have become a bit confused on the subject. Within the past year in my own city, a hospital administrator became very provoked because I would not hold pre-partum clinics, under his direction and in his hospital. More recently, and in my own city, a public health nurse circularized the medical profession by letter, lamenting the fact that her pre-partum clinic had few, if any, patients. I happen to know that in our city of approximately 30,000 people, the doctors do a very high class job in rendering pre-partum care on a private patient-physician basis.

My private obstetric practice is part of a private clinic practice and I feel that, over a period of 30 years, I have come to know my patients rather well. It is a rural practice for we have no large cities in North Dakota and fully 50 per cent of my patients come in from the smaller communities adjacent to Grand Forks. They come to see me because, in far too many instances, there are no physicians in their home communities. You had a similar situation in Kansas. They come expecting that they will have a complete history taken and a complete physical examination made. They know about the importance of the Wassermann test and the determination of the Rh factor in pregnancy. They expect urinalysis and blood counts. If they hadn't learned of the importance of these things, and many more, from me they would have learned of them through the Ladies Home Journal, The Woman's Home Companion, Good Housekeeping and the many homemakers' clubs and other women's clubs throughout the state. Glaring omission of any of these procedures by me is likely to be picked up by the patient, or by her neighbor or in her club. What, then, do I mean by personalized pre-partum care?

In the first place, I mean that we will study our obstetric patient as an individual. For one thing, this means that, as we take her history, we will pay particular attention to those antecedent illnesses or operations which might serve to make pregnancy hazardous. Furthermore, we will go even farther and note the family history and the marital history of the patient with great care. In that marital history, especially when one is dealing with a primiparous patient who has been married for three years or more, the question, "How long have you been 'trying' to become pregnant?" may suggest a low-fertility due to hypothyroidism and the desirability of a basal metabolic test and blood cholesterol determination.

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**From the Department of Obstetrics and Gynecology, the Grand Forks Clinic.

Some years ago, I ran a series of routine basal metabolic determinations on all pregnant women. This was done in connection with their first pre-partum visits, which meant that most of the tests were done in the first trimester of pregnancy. I obtained much valuable information from this work and came to the conclusion that minus or border line (zero to plus 10) readings were significant but that a single reading over plus 10 was usually a mechanical error and called for a re-check. The routine testing of all pregnant women with metabolic tests was discontinued because of the expense and inconvenience to the patients and the inability of our limited laboratory staff to handle it. But I learned that a zero or minus reading always calls for close observation of the patient.

Now that we have added blood cholesterol determinations to the metabolic studies in selected cases, I place the upper limits of normal as plus 10 on the basal metabolic reading and 250 milligrams per cent as the upper limit of normal on blood cholesterol. Empirically, I suppose, when a pregnant woman has a basal metabolic reading of zero to minus 10, I give her from one-half to one grain of thyroid extract per day; and I am likely to do this if the BMR is up to plus 10, provided the blood cholesterol is at or near 250 milligrams per cent.

This talk does not concern itself with sterility but the question, asked of the pregnant woman, "How long have you been 'trying' to become pregnant?" can most certainly point the way to a case of "low fertility" and, therefore, a borderline or an actual sub-thyroid condition which, as we all know, furnishes a large number of early, spontaneous abortions. I would add, just here, that we do not consider any patient a candidate for complete sterility study, in the absence of gross genital tract disease, who has not been married for a period of three years with normal sexual life throughout that time. This, of course, focuses some attention upon the husband. Is he "delighted" with the pregnancy which now brings his wife to your office? It is just possible that the woman who had been "trying" to get pregnant for some time did not have a sub-thyroid state but rather a refractory spouse!

In a series of 57 patients with toxemia of pregnancy I followed for a minimum of one year and a maximum of 19 years, the incidence of toxemia was over three times as high in patients whose parents had suffered from hypertension. I am also convinced, although without statistical proof, that obesity in both parents makes weight control in the obstetric patient more difficult.

Since it has been roughly estimated that approximately 10 per cent of pregnancies in white women will terminate in abortion, and since our knowledge of the etiology of abortion is not too exact, closer attention to the menstrual histories of our obstetric patients will sometimes help us to preserve a pregnancy which might otherwise terminate in abortion. The obstetric patient who established her menses late and who has a scanty irregular flow is an excellent candidate for early abortion.

And then there is the patient with an antecedent history of rheumatism, recurrent tonsillitis or scarlet fevor, with or without rheumatic heart disease. I am especially concerned, in such a patient, to detect the first signs and symptoms of cardiac inadequacy.

In North Dakota, x-ray screening of the general population for tuberculosis has been extensive and productive of much good. The follow through by the persons who have been told to see their physicians because of some questionable pathology in the chest and the follow-up by physicians has, for the most part, been good. When a history is obtained from an obstetric patient of questionable chest pathology, it is doubly important that her follow-up by x-ray examination be meticulous.

Many more illustrations could be given to show this phase of personalized pre-partum care, but the foregoing will suffice.

Secondly, when the examination of the obstetric patient is made, make it a complete one! That may be unnecessary advice in Kansas; but I can assure you that I see a number of patients each year on my pre-partum service who have been elsewhere and remark, at the conclusion of my examination, "Doctor, that is the first time I have been thoroughly examined during pregnancy!" Our pregnancy records, on a standard form, are made out in duplicate and are continued, in duplicate, throughout the pregnancy. By nature, I am a lazy man! Such a system of keeping records finds me with a completed pregnancy record when the patient goes to the hospital and all I have to do is to carry that record to the hospital on an early visit.

I start at the head and work downward, reserving the pelvic examination and pelvic measuration for the last. And just a word about pelvimetry! I know that many modern writers state that external pelvimetry is of little or no value. I protest! It is of value for two reasons: 1. It impresses the patient with the fact that you know she has a pelvis; and 2. It gives you a rough idea of the architecture of that pelvis. I still take the interspinous, intercristal, bi-trochanteric, external conjugate, bi-tuberous and posterior sagittal diameters some time in mid-pregnancy, especially in the primiparous patient.

I have my own way of taking the diagonal conjugate. I know that is is 10.5 cm. from the base of the index finger of my right hand to the tip of the middle finger of the same hand and that if I can

palpate the promontory of the sacrum on a deep, but not uncomfortable, bimanual examination on that patient, she has a narrow antero-posterior diameter of the inlet. As for the pelvic outlet, it still seems a prudent rule to me to add the bi-tuberous diameter to the posterior sagittal, and if the sum is 15 centimeters or less, to conclude that the patient has a narrowed pelvic outlet.

I am not an authority on x-ray pelvimetry, but this seems as good a time as any to attempt a personal and clinical evaluation of it. DeLee, in introducing the subject of the mechanism of labor to undergraduate students used to discuss the powers, the passages and the passenger (or passengers!) as the three important factors in the mechanism of any given labor. One certainly cannot gauge the effectiveness of the uterine contractions, nor the auxiliary effectiveness of the abdominal muscles in the second stage of labor, the resistance of the soft parts, the moldability of the head in the early stages of the mechanism of any given labor. That leaves for x-ray pelvimetry the task of giving us the size and shape of the bony pelvis and, with some limitations, the approximate size of the fetal head with some minor observations on the presentation and position of that head in a cephalic presentation.

I have never learned the technique of x-ray pelvimetry! This is fortunate for I have access to the services of a trained radiologist and thus I am not tempted to indulge in wishful thinking. Pelves, in my classification, fall into four types: 1. Large (or normal); 2. Small; 3. Flat, or 4. Distorted. When, as term approaches, my obstetric judgment leads me to question the capacity of any given pelvis, I refer that patient for pelvic roentgenography, and the attempted correlation between clinical and radiographic pelvimetry is very stimulating.

The foregoing approach to this problem has both an obstetric and a financial advantage to the patient. In so far as pelvimetry is concerned, a flat antero-posterior plate of the abdomen has no value. In spite of this, I am not infrequently called upon to see such a plate, taken with a woman in labor or approaching term, and then asked if I do not think she has a contracted inlet!

In our attempts to personalize our pre-partum care we follow rather definite indications as to when to include x-ray pelvimetry in that care. A history of previous dystocia or previous cesarean section calls for x-ray pelvimetry, as do a diagonal conjugate below 11.5 cm. and the sum of bituberous and posterior sagittal diameters of less than 15 cm. Beyond that, there are only three classes of patients in whom its employment is almost routine. First, there is the primiparous patient in whom, with a head presentation, the head is not engaged at term or in whom the Hillis maneuver is not positive; second, the primiparous patient of 40 or over, and third, the very young primiparous patient, meaning 15 years or younger.

At the time of our obstetric patient's first visit we have the basic laboratory work done. This consists of a urinalysis, hemoglobin determination, red and white blood cell counts, Wassermann test, the determination of the Rh factor and the patient's blood group. When the Rh factor is negative, the husband is asked to report to have his Rh factor determined as well as his blood group. This has been our procedure for several years. It affords an opportunity to become acquainted with some husbands that one would not otherwise see during the pre-partum period, and I am very sure that the added safeguard it provides is well worth while. When I have discussed the Rh factor with a husband, I usually find that he asks other questions about his wife's condition and this affords additional opportunity to obtain his cooperation. Not only that, but I have been pleased by the number of times other prospective husbands have called me to say that they would like to come in and talk about their wives, solely because a neighbor husband, who had had some of these things explained to him, was pleased about it and thought it a fine idea. There is another aspect of personalized pre-partum care which all the bureaucrats in the world can't match!

Get personal with your pre-partum patient about her weight gain in pregnancy, especially when that becomes excessive! I don't know the cause or causes of the toxemias of late pregnancy any more than you do, if as well. But I do know that the incidence of toxemia in our practice, averaging about five per cent for the entire group, is much higher in women who gain weight excessively in pregnancy. When one rules out the clinical triad of toxemia of mid or late pregnancy, hypertension, edema and albuminuria, and still finds an excessive weight gain developing, he is smart if he begins to take unto himself somewhat the role of a psychiatrist.

Not long ago I watched a little primiparous patient gain from 106 to 127 pounds within two months. There was no evidence of toxemia and, like fat men and women the world over, she "didn't eat a thing!" But her husband was away on the road a good deal, she was completely bored with herself and she nibbled and pecked away at this, that, and the other food, unaware of the vast quantities of food and pounds she was storing away. Dr. Calkins was most certainly correct when he insisted upon asking the patient, "What is your 'usual' body weight?"

Get personal with your patient on a few other

matters besides gain in weight in pregnancy! To mention just a few:

1. Constipation. This is endemic among pregnant women in North Dakota. I ask my constipated patients to drink a glass of hot water and to eat an apple or an orange each morning before breakfast and each evening before retiring. Then I ask them to drink at least six additional glasses of cool water during the day. I rarely succeed in getting a total of eight glasses of water into the patient in any one daily period, so it becomes necessary to add mineral oil at bedtime in many instances.

2. Hemorrhoids. As a corollary to constipation, but sometimes without its aid, varicosities do appear in the anal region as well as in the legs. Mineral oil alone, or occasionally with milk of magnesia added, will reduce the incidence of hemorrhoids somewhat; but suppositories will often help a great deal. However, when a pile becomes thrombosed, the kindest thing to do for your patient is to evacuate it by incision following infiltration anesthesia with one per cent novocain solution, then use the suppositories! Show me an obstetrician who is sympathetic toward his patient's piles and who does something constructive about them, and I will show you one who enjoys the gratitude of his patients.

3. The care of the breasts. I have gone through the various routines of the care of the breasts in pregnant women, pre- and post-partum, with the exception that I have not used the recent plastic dressings, and I have now reduced my treatment to what I think are its simplest terms. I ask the pregnant woman to bathe the breasts, particularly the nipples and areolae with Ivory soap, warm water, and a coarse-meshed wash cloth at least three times a week and pat, not rub, the breasts dry with a coarse towel after bathing.

4. Foundation garments. I use the Camp garment exclusively where a pre-partum garment is needed. This is a great advantage to me and a boon to my patients. It helps to relieve low-back pain, it aids in the relief of constipation, it reduces the incidence of lower abdominal discomfort, and it encourages the patient when she realizes that you are making a valiant effort to conserve or improve her figure. We have three women in two stores in our city who vie with each other in fitting Camp garments. I am very glad to cooperate with them by letting them have the "headaches" of fitting while I act as consultant in the matter of inspection. This is just another bit of "personalized" service.

There is so much danger in our strenuous lives that we fall into one of two evil ways, or even into both. We either do everything on an "assembly line" basis or we delegate as much work as we can to a nurse or an office assistant, especially in the field of pre-partum care. No one uses or values the services of an intelligent nurse more than I, and I have been most fortunate in my selection of them. But I want to talk to my post-partum patient myself and find out, first hand, how things are going with her and, in doing that, I do not want her to feel that she is being rushed into and then crowded out of my office. Several years ago I was called upon to admire a new suite of offices and the particular pride and joy of the physician who owned those offices seemed to be a battery of six cubicles where, he assured me, his nurse could see "six obstetric patients every 30 minutes." The time the doctor was to spend with each patient was not stated. At the last report, his obstetric practice was not flourishing.

I know another physician, a highly successful obstetrician and gynecologist in a large, mid-western city, who is constantly in demand, chiefly, I believe, because he never appears to be crowded. While it may be difficult to get an appointment with him, he always seems to have time to give to each individual patient when she reaches his office. His patients don't seem to mind when one of his well-trained associates delivers them; but they will gladly tell you how much help they get from his patient and personalized pre-partum care.

So far as I have been able to determine, and I'm sure you will agree, there has been nothing scientific in this talk. Everyone knows that obstetrics can stand a great deal more science. If there is any skeptic on this point, let me ask the cause of the toxemias of late pregnancy. There is a niche in the obstetric Hall of Fame in the Chicago Lying-in Hospital awaiting the bust of the individual who can scientifically answer that question. At last reports, it remains unoccupied. Or one can be simpler in his questioning, though still scientific, and ask what initiates normal labor or what determines the size of a baby at term. Yes, obstetrics can stand a great deal more science!

But medicine in general, and obstetrics in particular, can stand a great deal more art! Dr. Henry A. Christian[1] speaking of internal medicine, but just as applicable to other specialties, stated that "there is undesirable emphasis placed on investigation as the most important factor in the training of those who are to become in later life physicians and teachers of internal medicine." He added, "Please note that I said physicians *and* teachers, not physicians *or* teachers, for I believe both need the same form of early training." This entire address is so stimulating that I recommend that you read it in its entirety. Only one further quotation from it need be given to illustrate my point: "Pub-

lication and the developing of a personal bibliography, besides so often being a major interest to the young man, seems to me to have become almost a game or racket utilizing devices to gain multiplicity of published papers."

And so, back to the art of obstetrics in this rambling discussion of personalized pre-partum care. Obstetrics is and will remain the general practitioners' specialty. In the three-point program which Dean Franklin D. Murphy[2] outlined for medical care in rural Kansas, the problem was stated in a statesmanlike manner and a proposed solution was offered. As this program is developed, you will place increased emphasis upon the art of obstetrics. Dr. Calkins and his splendid staff at the University of Kansas Medical Center can teach the science of obstetrics to undergraduate and graduate students and give them an insight into the art of obstetrics; but it takes a lifetime of living and practicing an art, any art, before one becomes an artist. I happen to know that Dean Murphy and Dr. Calkins are very much interested in short courses for practitioners not only of a few days but also from two to four weeks. With the development of your program of decentralized teaching in obstetrics, there is no better place to start than with the undergraduate in the private office of a private practitioner, and no better subject than personalized pre-partum care. The private practitioner is and should be a teacher of better obstetrics. He can add the personal touch which is so necessary for the welfare of our patients and so vital to the American way of life. In Kansas you are integrating him into your program of medical education in a way that is inspirational to him and to his students. More power to you! Such efforts as you are making can only result in better medical care for the citizens of your state, and for the citizens of any state which will follow your example.

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Rehabilitation of the Quadriceps*

American College of Surgeons

Committee on Trauma

"We are wasting a tremendous amount of money and manpower by treating a broken bone and letting a well man get sick physically and mentally while under our care. Then after the damage is done, we spend months, years, or a lifetime trying to bring him back to normal."

Dr. Robert H. Kennedy, chairman of the American College of Surgeons' Committee on Trauma, said this in May, 1941, and now can we honestly say that this statement is no longer true?

"Rehabilitation"—"Physical Restoration"—"Restorative Therapy"—"Third Phase of Medicine?"

The *name* is relatively immaterial but *to be conscious of its importance* in speeding recovery and to avail oneself of the facilities and methods available towards this end, *is* the important thing.

Great strides have been made in the techniques of the definitive treatment of trauma in the early stage, but can we say the same holds true during the convalescent stage?

World War II demonstrated conclusively that when only a portion of a man was damaged, serious deconditioning of the *whole* patient *could* be avoided by the early institution of preventive measures. Such measures used were nothing new or difficult. It was merely that already well known, simple principles were systematically begun and carried out on the ward as soon as medically advisable and continued through convalescence to speed recovery. It does not seem reasonable nor good medical practice to discontinue such procedures now.

Rehabilitation does not require elaborate equipment in a large clinic. It does not mean hours of passive participation under a lamp or diathermy or days of non-productive, monotonous exercises. True rehabilitation begins at the bedside or in the clinic or office where the surgeon first directs his treatment toward the early functional restoration of the injured part. Sometimes it may mean the reassurance that an injury or illness is not serious and no special treatment is required. The surgeon must counsel, advise and instruct the patient, and both think and speak in terms of the patient's personal problems if rehabilitation is to have a firm foundation.

For example, often painstaking instruction is necessary by the surgeon in the proper use of cane or crutches. Most beginnings with each individual patient will be on a small scale and much of the restoration will be done by the patient in his own everyday environment. Only the more serious cases will

*This is one of a series of articles on rehabilitation on a specific problem. The material was prepared by Leonard T. Peterson, M.D., Washington, D. C., who is a member of the Subcommittee on Rehabilitation, of which A. William Reggio, M.D., Medfield, Massachusetts, is chairman.

require special clinics or centers for their restoration.

The surgeon in charge cannot be absolved from the responsibility of doing all he personally can to prevent deconditioning and commence the work of restoration in spite of the possible lack of formal, ancillary restorative services at his hospital. Much can be done to get the patient in good condition and certain deformities, contractures, limitations of motion, atrophies of disuse, restricted functions, disturbed mental attitudes and warped outlook on life *can* be avoided or greatly reduced in most cases if the surgeon will inspire his assistants, residents or interns with the proper thinking and consciousness of their obligation to the patient.

Where the ancillary services of physical and occupational therapy *are* available, they are invaluable aids to attaining physical restoration if optimal use is made of them. To assure the best results they must be started early. Depending on the cases, restorative therapy may be started on the ward, in the clinic or office, always, of course, under the guidance and direction of the surgeon whose responsibility it is to be able to give that guidance and direction.

Excellent work is being done by the limited number of rehabilitation facilities available at present, and by earlier referral they could be helped more in returning the patient to employment even sooner. Delay between the time of injury and the commencing of restorative therapy frequently may be the main factor that will determine whether success or failure in restoring function is to be the result. When every physician caring for a traumatic case is fully conscious of the necessity to commence preventive and restorative therapy at the earliest possible moment after injury, the time lost by the patient from remunerative employment can be reduced.

It is the purpose of this release to be of assistance and guidance to all who assume the responsibility of caring for traumatic cases.

Rehabilitation of the Quadriceps

"But, doctor, my knees feel so weak." That is the most common complaint after illness. The weakness is not, of course, "in the knees" but of the quadriceps muscle. It may be said that physical rehabilitation begins with the quadriceps. The purpose of this release is to review the anatomy and function of this important mechanism in such a manner that it may serve for the instruction of medical personnel and patients.

The upright position of the body is maintained by the tonus of the antigravity muscles, essentially the gluteus maximus, quadriceps and gastrocnemius-soleus, without which the lower extremities tend to collapse. The most important and most common site of instability is the knee joint. This joint is essentially a hinge which can collapse in only one direction, namely flexion, since lateral motion and extension are limited by the contour of the bones and the stability of the ligaments. Except for unusual factors such as hyperextension deformity or fibrous ankylosis, only the quadriceps muscle keeps the knee from giving away in flexion. In addition to maintaining the erect position, the quadriceps has the more active function of extending the knee in walking and of lifting the body weight in arising or climbing steps.

The quadriceps, as its name implies, is a composite muscle of four origins and a common insertion. Only the rectus femoris arises from the pelvis where it is attached by two heads in front of and above the acetabulum. The other three muscles, vestus lateralis, intermedius and medialis, arise from the lateral, anterior and medial aspects of the femur. The four muscles merge to form the quadriceps tendon, which contains the patella, and then continue on as the patellar tendon which inserts into the tibial tubercle. Except for the hip flexion produced by the rectus femoris, the action of the quadriceps is solely that of extending the knee; or, as indicated above, of keeping the knee in extension under load while the individual stands. With the knee in full extension the maximum effort is required for standing; therefore it is important that the angle of full extension be jealously guarded in all conditions where muscle power or joint motion might be lost. The nerve supply of the quadriceps is the femoral nerve, fortunately seldom subjected to injury, but unfortunately its cells of origin are often involved in diseases, particularly poliomyelitis.

Any illness or operation which confines a patient to bed leads to rapid atrophy, loss of tone, or deconditioning of the quadriceps. When walking is resumed there is, therefore, a lack of confidence and security best expressed as "weak in the knees." Ascending and, particularly, descending stairs require care or assistance. Elderly people may find it difficult to regain this lost strength and are prone to fall, and incur serious injuries. A few brief periods of daily exercise or reconditioning prevent this atrophy and provide a valuable safeguard. Exercises which are productive or competitive are more interesting, but the patient soon grasps the importance of these less interesting static "muscle setting" or active exercises. At the same time other muscles must participate and benefit by the exercises. Finally, the benefit to circulation and general nutrition should not be underestimated.

The strength of the quadriceps has direct relation to trauma or disease involving the knee joint. After severe trauma or surgery about the knee, the quadriceps suffers almost a complete temporary paralysis due to some reflex mechanism. Re-education and redevelopment of the muscle are the single most important part of rehabilitation after injury or surgery. Diseases such as arthritis cause atrophy of the quadriceps and frequently lead to flexion deformity because of this weakness as the flexors exert stronger pull than the quadriceps or extensor. The synovitis which follows an injury or disease often persists until the muscle has regained its strength. Unless active rehabilitation measures are taken the disability becomes chronic and even permanent.

What then can be done to preserve or regain the power of the quadriceps muscle? While physical rehabilitation has many other aspects, this subject is one of the most important and serves as a good starting point. Quadriceps training requires no special apparatus or skill. Let us itemize a few essential details.

1. The attending physician must bring rehabilitation to the bedside. He must be aware of its importance and be willing to devote a minute or two during his daily visit to the instruction of the patient.

2. The patient should be told that *he alone* can exercise his muscles. Massage or mechanical devices *cannot* develop strength. The impulse starts in his brain and follows the nerve pathway to the muscles. Strength is attained only by active exercise. Periods of instruction or clinic treatment are only training for the work the *patient* must perform between visits.

3. Factors limiting the intensity of exercise are essentially (a) pain and (b) fatigue. The patient seldom exercises beyond the limit of either, and he may safely exercise if he experiences neither excessive pain nor fatigue.

4. The knee should be in extension during most of the time while at rest. Especially after trauma or surgery involving the knee is this important. The patient who lies for even a day or two with his knee flexed over several pillows will have to spend considerable time and effort regaining extension.

5. Exercise should be started as soon as possible after the patient is confined to bed and within 24 hours after surgery or trauma.

6. Exercises may be classified as (a) static, (b) passive, (c) assistive, (d) active, and (e) resistive.

(a) Static exercise means contraction in situ, isometric contraction, or contraction without joint motion. It is performed with the knee *in extension* by (1) pulling the patella up, (2) by pressing the knee down, or (3) by simulating the motion of lifting the heel off the bed.

(b) Passive exercise, which is motion carried out by the therapist, is not true exercise and is usually not indicated as there is no voluntary muscle contraction.

(c) Assistive exercise is active plus passive exercise, and is helpful in the early stages of rehabilitation.

(d) Active exercise is entirely voluntary contraction, usually against gravity only.

(e) Resistive exercise is voluntary contraction against manual or weight resistance.

Exercises—static, active, and resistive—are progressive in that order. A type of exercise which does not attain full knee extension is ordinarily too advanced and should not be used. For example, if the patient cannot hold the leg fully extended against the force of gravity, he should not attempt to lift the leg but should be limited to static exercise. If he cannot lift weights and fully extend the knee, he should be limited to active exercise with only the weight of the leg.

Exercise to be effective must be strong, intermittent, and interrupted by a brief period of relaxation so that the muscle may recover by receiving nutrition and oxygen, and by eliminating waste products. A muscle held in a prolonged state of contraction tends to fatigue and atrophy. The best method of relaxing a muscle is to contract the antagonist muscles or, in the case of the knee, to flex the knee slightly between each exercise. The patient is advised to perform a complete cycle "contract—hold—relax—rest" about eight times a minute. Thus in five minutes he can perform 40 complete cycles —a good goal *for every hour* while in bed or sitting up so as to get ready for walking.

After the patient can straighten the knee and hold the leg against the force of gravity, active exercise is indicated. He may lift the leg actively from the bed or, while sitting, actively flex and extend the knee over the edge of the bed or table—always to full extension. Finally, increasing resistance is added by weights attached to the foot. While repeated exercises develop endurance, strength is developed by a few exercises daily with the maximum weight which can be lifted effectively. Particular emphasis should be placed on development of the vastus medialis which contributes most to the last few degrees of knee extension.

In walking, with or without crutches, the knee should not be held stiffly in extension lest the muscle fatigue and atrophy. Walking with a passive pendulum motion at the knee does not develop

muscle strength. As the leg is moved forward the knee should flex slightly in order to relax the quadriceps. As the heel strikes the ground the quadriceps should contract in order to extend the knee fully and give the individual a secure gait. If the surgeon holds his hand on the patient's thigh during a few practice steps, he will readily detect the quality of the muscular action and be able to prescribe corrective measures. Steps should be symmetrical in length and timing. A good motto for the convalescent patient undergoing quadriceps rehabilitation is "Every Step an Exercise."

BLUE SHIELD

Emphasis on Enrollment

Greater enrollment in Blue Cross-Blue Shield is the keynote for the coming 1951-52 enrollment season. The entire organization is being geared to the fall, winter and spring enrollment campaigns.

Perhaps the greatest single factor in the increased understanding of Blue Shield by the public and by the profession has been the fact that the Blue Shield enrollment has increased over 100 per cent in the past two years with a quarter of a million members now enrolled. More and more doctors are now participating actively in the program. The check on participation by doctors during 1950 reveals that out of some 1,450 participating physicians, 1,217 provided some service to Blue Shield members. This speaks for the fact that the Blue Shield enrollment is widely diffused throughout Kansas. This broad distribution of enrollment is due primarily to the community enrollment programs as practiced by Kansas Blue Cross-Blue Shield.

Doctors' Cooperation Urged

A regular pattern of cooperation and support by the medical profession has been developed in Kansas in connection with the enrollment activity itself. As a prerequisite to any community enrollment effort, both the physicians and the hospital are asked to play a part. A recent example of this type of cooperation may be found in the community enrollment for the city of Coffeyville. The Blue Cross-Blue Shield enrollment representative first met with the hospital and with the doctors on the hospital staff and arranged for a follow-up meeting with all of the doctors in the city. Representatives from the physician relations program of the Topeka staff were called into this arranged meeting. Thus, it was possible at the meeting to discuss matters of interest to the doctors in connection with the program itself; that is, scope of benefits, fee allowances, income levels and similar points of information, as well as to discuss the part that might be played by the doctors in the enrollment activity. In this meeting at Coffeyville, the physicians asked the question, "What does Blue Cross-Blue Shield want us to do in connection with the enrollment?" After considerable discussion this was the program which the doctors agreed upon.

1. Financing by the doctors of an advertisement endorsing Blue Cross-Blue Shield and urging consideration of the enrollment opportunity by the people of Coffeyville.

2. Distribution through monthly bills of an announcement card signed by the physicians. This card urged consideration of the enrollment opportunity.

3. Cooperation of medical assistants in serving as information points and in actual assistance in getting applications into the hands of patients.

4. Attendance by some representative of the medical profession at each of the meetings with volunteers. (In Coffeyville a careful schedule was worked out assigning a physician to each one of the planned meetings.)

The primary objective for participation by the medical profession in community enrollment is to establish as public information the fact that the profession itself endorses and supports Blue Cross-Blue Shield. It is increasingly important that the public be informed of the real interest of the profession in the program. Wherever this identification has been effective, the enrollment in the community also has been effective. The real underlying reason back of having a successful enrollment is not solely from the point of view of numbers of members enrolled. Deeper than this is the need of Blue Cross-Blue Shield to attract an average selection of health risk in the community. It is important to bear in mind that in making these programs available to entire communities without restrictions, health questionnaires or exclusions in the contract, Blue Cross and Blue Shield are still pioneering. The plans are working on the concept that to be of value to any community, they must be available to the community; that if we limit our activities only to preferred risk groups, we are not accomplishing the job which the medical profession wants us to accomplish. Thus, this broad experimentation with community enrollment. Thus, too, the seriousness with which physicians are urged to participate in an effort to make the program successful.

PRESIDENT'S PAGE

Dear Doctor:

The material damage caused by the recent flood is known to have affected approximately 42,000 families. To some four per cent of these families came destruction of their homes; about 45 per cent of the total suffered major to minor damage, and to the remaining 50 to 51 per cent the flood inflicted less severe punishment. There of course is no measuring appliance to gauge or record the damage inflicted upon mind and body; yet we can reasonably assume that in this instance, like others of similar character, there was a sharp rise in ill health and a great demand for preventive medicine. Kansas medicine is proud to have demonstrated its being equal to these occasions. It is to be recognized that the profession in the affected areas was called upon to care for some 100,000 people who by no fault of their own found themselves in serious economic straits—and to my knowledge no family has sought medical care and failed.

These conditions and circumstances caused me to ask myself where and how can the members seek compensation during such disasters, with peak earning years so few, tax liability at its peak, and no means of equitable retirement fund per tax adjustment?

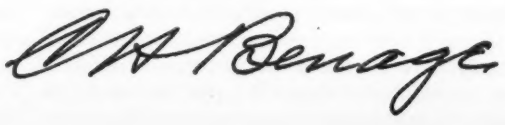
I began to look for some data. For the first I turned to my own federal income tax copies and their accompanying work figures and tables of 20 years ago and followed down through the years. After consultation with a tax attorney I received a copy of the speech by Senator I. M. Ives given July 25 past to the Senate urging an amendment to the Revenue Act of 1951. Then a few days later I received a complimentary copy from the Bureau of Medical Economics covering in minute detail a survey of physicians' income. I feel I found answers to the problem above recited.

It would appear that Senator Ives' amendment would eliminate the now alleged discrimination against certain groups, one of which is the independent practicing physician. I would like to briefly recap the data for your information and possible later consideration.

The doctor doesn't reach peak earnings for some approximate 15 to 18 years after starting practice and during this time, from practice alone, it is as a rule most difficult to produce much of an estate. Then when he reaches the peak years the tax liability becomes greatest, thus the net saving result isn't appreciably affected from former years of earning. The peak years are few; it is recorded the general practitioner enjoys his peak years at the age of 40 to 44 and the full time specialist reaches his at the age of 45 to 49. At the conclusion of his peak earning years he has consumed in excess of 50 per cent of his active practicing and working life and at no time has he been able or permitted to arrange his own personally financed retirement fund such as is permissible for the executive in business and other groups who can build their retirement fund and do it tax free (until they do retire). Moreover, they enjoy a longer working life in which to do it.

It would appear to me personally that should adjustments in taxes during the peak earning years be forthcoming, we could perform the charity in caring for our indigent and could meet disasters such as the recent flood and yet not be denied a right to attempt to provide per our own labors and savings a fund set aside for our old age obligations.

Always sincerely yours,



EDITORIAL COMMENT

Indigent Health Care

Following a report from the Board of Social Welfare on the dramatic increase in health care costs for indigents, the Kansas Medical Society began a thorough survey of this program. County societies have been requested to assist in supplying statistical data and the welfare board is offering its resources in providing necessary information. Upon completion, tabulations will be given to the county societies so they may compare their program with others in the state.

This survey will provide considerable information that is today lacking or only sketchily understood. Recorded will be an analysis of how each county program is operated, by contract, fee schedule, on an insurance basis or by the county physician plan. A sampling of fees charged and fees paid will indicate the rate of payment for services rendered.

The total indigent care cost will be compared with the health care cost in each county. Health costs will be divided among the various services showing the per cent of the total paid for hospital, drug and medical expenses. Usage rates will be established by dividing the total medical services into the total persons eligible for care and the doctor's average indigent care income will be obtained.

From this data the medical society and the welfare board will have a sounder basis on which to study this problem. Present information, with only 15 per cent of the counties recorded, already provides some interesting figures. There is, for instance, an indication that one-half the total health care cost is for hospitalization.

Another surprising indication is the high utilization rate among indigents. This figure needs a word of explanation but when properly defined presents, we believe, a valid comparison. Utilization is judged by dividing the total separate services rendered into the total persons eligible. It should be remembered that many services might be given to one person so, of course, on this basis the figure will be high. However, from reports currently received, this ranges from 35 per cent to 250 per cent utilization per month.

It appears at this time that the rate of payment for medical services is small, except in the less populated counties where the direct fee for service plans operate. In one county a year's average of all payments to doctors for all services rendered came to $1.93 each.

In a meeting with hospital administrators and pharmacists it was learned that they too are providing services at a loss and that they feel this cannot be continued at present rates. The present average per day cost for all Kansas hospitals, according to the standardized accounting system, is $13.45. Pharmacists, filling prescriptions for indigents at cost plus a per cent that varies in different areas but averages about 25 per cent over cost, report they are losing money under such programs.

And yet the welfare board is of the impression that present expenses are higher than can be paid. Rough estimates indicate total welfare costs for the state to reach $43,000,000 annually. Seven million, or one-sixth of the total (16 per cent) is for health care. About 70,000 Kansans are currently on relief. If those figures are correct, and they come from the welfare board, it costs about $514 each year to provide one person with food, clothing and shelter and it costs $100 to care for his illness.

Whether that figure is high or low we do not know at this time, but it will be determined accurately as the survey progresses. There are, however, a few things that are clear. Some factors were obvious before the survey began. These are intangibles, quite unrelated to statistics perhaps, but questions which the profession will decide as the future course of these programs is experienced.

There was a day when the physician treated indigents without charge. That loss was added to the fees of those able to pay. Today with charges becoming more standardized the loss in charity work is not readily absorbed elsewhere, so Kansas has toyed with low-rate assessments for indigent patients.

Some states have adopted flat rate fee schedules for service to all governmental agencies, making the same charges for indigent care as for veterans. Their theory is that medical service is a purchasable commodity and not worth less to one governmental agency than to another. The grocer does not offer food to the indigent family at a reduced cost, so why should medicine.

Another theory is that medical care is a service made available to all, regardless of their ability to pay.

The utilization rate is largely in the control of the case worker and the physician. Overall cost might be reduced if additional care was taken to certify only those persons actually in need of assistance, and by the doctor who will economize in the care given. The latter is difficult on the basis of what is good medical care because certainly the hospital provides infinitely better facilities than the average welfare patient's home. Hospital care also aids in conserving his time and reduces the net loss he suffers in attending the patient. So even this

thought, as simple as it appears on the surface, is filled with ponderous variables.

There is a fundamental question which will be determined one way or another. The medical profession should either perform this as charity for a needy class of persons or think in terms of contracting with the government for an obligation the government has assumed. On the former plan the savings will not be dramatic because other health services represent perhaps three-fourths the total cost. But if the second theory is pursued the cost will rise, bringing with it a corresponding tax increase.

Who knows which is the correct course? Perhaps the problem is even deeper than this. Consider governmental waste and the endless advance of federal paternalism. How can the infinitesimal doctor's broom sweep back that tide? And yet the philosophy of the welfare state will engulf us all unless somewhere someone moves to reverse the trend. Perhaps this is the opportunity.

Shall medicine bargain with government for fair wages and thereby present the public with a graphic picture of the true cost of government medicine? Shall the present sham of part payment and reduced fees be exposed and a realistic fee schedule adopted, or shall the medical back be turned on governmental aid for the sake of donating service to the individual needy person? It isn't an easy question—almost like asking whether medicine shall be a business or an art. That isn't so simple either.

Physicians' Incomes

During the past months the United States Department of Commerce and the Bureau of Medical Economic Research of the American Medical Association cooperated to conduct a survey of physicians' incomes. This has been completed and published in the July 1951 issue of *Survey of Current Business,* and a lengthy review of that article appeared in the July 28, 1951, Journal of the American Medical Association. The following summary presents only a very few of the many statistical ideas contained in the article.

Approximately 42 per cent of the 55,000 physicians in the United States replied to the questionnaire, giving this survey the highest rate of response of any previous survey conducted by the United States Department of Commerce.

The average net income of all physicians before taxes in 1949 was $11,058. Excluded only are interns, residents and teachers. Physicians whose major source of medical income was from private practice averaged $11,858; salaried physicians, $8,272. Full specialists had an average net income of $15,014, of which neurological surgeons, with an average income of $28,628, had the highest with pathologists, $22,284, and gynecologists, $19,283, next in order. Physicians who were members of partnerships had a net income of $17,722 as against $10,895 for those practicing alone.

Interesting regional results were obtained. It was learned that on an average physicians in the far west earned the highest incomes, and the lowest was in the New England states. Considering all physicians, Minnesota, with an average of $13,175, had the highest mean net income of any state. Considering only independent physicians, Arizona led the nation with $15,599. Vermont, with an average income of $7,527, Maine, Arkansas and Rhode Island were the states reporting the lowest average income. Kansas, with $11,039, was almost exactly at the national average.

Interesting also is the fact that the largest average income was not reported in the largest cities. The smallest average mean net income, $7,090, was reported in places having fewer than 1,000 residents. Incomes increased with the size of the city until a peak of $12,766 was reached in cities of 250,000 to 500,000. From there on upwards the average income declined to $10,021 in cities of a million or more. In other words, physicians practicing in cities of over a million had a smaller average income than physicians from any other city size except those below 25,000.

The article gives two sets of figures for most of the statistical tables. One is the mean average which is obtained by dividing the total income by the total persons. The other, often considered more accurate, is the median figure which represents the figure for the individual in the arithmetical center of the tabulation. In the case of figuring a median income, the figure represents the amount that is exactly in the middle, that there are the same number earning more and earning less. The median income of all physicians is $8,835 before taxes. This is considerably lower than the average mean income. It may be of interest to know that .8 of one per cent of all physicians reported a net loss up to $6,000; .1 of one per cent of all physicians reported an income from the practice of medicine of $75,000, and over. The range of net incomes was from a loss of $5,000 to a net profit of more than $200,000. Gross incomes from the practice of medicine range from $100 to $550,000. About one in every 100 reported a net loss in 1949; one out of 14 made less than $2,000 net income; almost one in four made less than $5,000. At the other extreme, one in eight made over $20,000 and one in 15 reported more than $25,000.

For the first time since surveys of this type were conducted, the income of physicians is greater than that of dentists or lawyers. In 1929 lawyers

and physicians earned approximately the same incomes. In 1940 physicians were slightly behind lawyers, but since then the lawyers have dropped considerably behind. Non-salaried physicians have increased their mean net income from 1929 to 1949 by 125 per cent. Non-salaried lawyers in 1949 averaged $8,083, an increase of 46 per cent. Dentists have had a lower median and mean net income all through the period. This difference is now more than 50 per cent greater. Their average increase of income since 1929 is 67 per cent.

Much more material is contained in this article which will be summarized in detail by Frank G. Dickinson, Ph.D., director of the Bureau of Medical Economic Research, in the Journal of the American Medical Association. Additional information also is available in the executive office of the Kansas Medical Society, should this be requested.

From the analysis made at this office, two findings of major importance appear to stand out. One is proof of the fact that a physician in a rural area with greatly reduced professional and living expenses can earn an income comparable to and perhaps exceeding that of physicians practicing in the major cities. The second is that while physicians' incomes have increased this has been at almost exactly the level of the average increased earnings of the population as a whole. Physicians' incomes increased at 108 per cent in the years between 1929 and 1949. The average income increase of all persons in the United States during that same period was 109 per cent.

Medical Education Foundation

Some months ago the American Medical Association created a fund to aid medical schools. This fund, known as the American Medical Education Foundation, will be raised from voluntary donations either from the medical profession or from without. In July of this year the first grant of $1,132,500 was given to the 79 medical schools in this nation.

The American Medical Education Foundation is sponsored by the medical profession of the United States. Fifty-three per cent of the donations have come from doctors and other medical sources. This is the medical profession's answer to those who claim that medical education cannot survive without federal aid. If $1,000,000 or more each year can be contributed to this fund, the answer will be conclusive and one more threat of socialization will have been conquered.

All physicians are invited to give to this fund in any amounts they wish. All contributions will be acknowledged in the Journal of the American Medical Association, but the amount given will be withheld. Similarly contributions are gratefully accepted from any other individual or organization who desires to make a tangible expression of his belief in the free enterprise system of medical care and medical education. Contributions should be sent to the American Medical Education Foundation, 535 North Dearborn Street, Chicago 10, Illinois. Mr. Russell F. Staudacher is the executive secretary, and on the board of directors are many physicians familiar to all. The names include such men as Dr. Elmer L. Henderson, past president of the American Medical Association and currently president of the foundation; Dr. Louis Bauer, president-elect of the American Medical Association; Dr. George F. Lull, secretary and general manager, etc.

Acting Dean Appointed

Dr. Edward H. Hashinger, a member of the faculty of the University of Kansas School of Medicine for the past 30 years, has been named acting dean of the school to serve until a permanent appointment is made. Dr. Franklin D. Murphy, who resigned as dean to become chancellor of the university on September 1, reports that at present five major candidates are being considered for the position of dean and that an appointment will probably be made within three months.

Dr. Hashinger has played a leading role in the development of the university's postgraduate medical education program, which is one reason for his selection as acting dean. In that position he can assure continued coordination of the graduate program. As a member of the faculty he is professor of medicine and gerontology.

Oklahoma City Clinical Meeting

The Oklahoma City Clinical Society, which had its beginning in 1930, will open its 21st annual four-day conference October 29, 1951. A large attendance is expected as Oklahoma City is centrally located and is rated third in the nation as a convention city.

The program will include lectures and discussions by 16 guest speakers from medical and teaching centers throughout the country, in addition to many Oklahoma City teachers and physicians. Dr. John W. Cline, president of the American Medical Association, will speak at the first banquet meeting, October 29.

In addition to general assemblies and panel discussions, there will be daily luncheon round table question and answer sessions and a clinical pathological conference. Entertainment will include dinner meetings, a dinner dance, and a stag smoker. Physicians who are members of the medical society of the county in which they reside are invited to attend.

Case Reports from the University of Kansas Medical Center Tumor Conference*

Carcinoma of the Lung

Edited by R. E. Stowell, M.D., and D. M. Gibson, M.D.**

Carcinoma of the bronchus is one of the most common types of cancer and is nearly nine times more frequent in men than in women. Recent advances in thoracic surgery have not given corresponding improvement in patient survivals because the tumor spread is too extensive by the time the diagnosis is made. These two cases, one of which is among the 10 per cent group of peripheral lung cancers, illustrate some of the problems frequently encountered in such patients.

Case No. 51-3

C. T., a 65-year-old white man, was admitted to the University of Kansas Medical Center on December 4, 1950, with a history of lung trouble with chronic cough most of his adult life. The cough became persistent one year before and in March, 1950, because of blood-streaked sputum he saw his local doctor, who treated him with antibiotics for virus pneumonia. Because of persistence of symptoms, he was bronchoscoped at this hospital, and stenosis of the right lower bronchus was seen. Bronchial washings contained no abnormal cells.

The patient's symptoms continued; he returned to this hospital in November, 1950, and another bronchoscopy was done. At this time a positive pathological diagnosis of squamous cell carcinoma was made. Since that time the patient has had a much more productive cough, with more hemoptysis. In the last several months he has had night sweats, dyspnea and fever. Weight loss in the last nine months has been 35 pounds. The blood pressure was 160/80 and only the physical findings of the chest were significant.

The patient was subjected to a right thoracotomy on December 6, 1950. The middle and lower lobes of the right lung were adherent and almost entirely replaced with tumor. The hilar vessels were adherent, with extension across the mediastinum to the left side. As the lesion was non-resectable, the incision was closed. The postoperative course was uneventful.

Case No. 51-4

C. N., a 56-year-old white man, was admitted here on November 22, 1950, with a history of cough of 15 years duration, which was productive of a slight amount of mucus. The cough was worse in cold weather, was associated with frequent bouts of respiratory infection, and was accompanied by left chest pain. Since September, 1950, there had been several episodes of blood-streaked sputum. Because of the hemoptysis, he went to his local doctor, who found a tumor in the left chest by roentgen examination. The patient was working in a feed store and thought his coughing was due to dust. He had lost six pounds in weight in four months. There was diminution of breath sounds in the left base. Tuberculin and histoplasmin skin tests were negative.

Biopsy at bronchoscopy revealed the left lower bronchus to be filled with squamous cell carcinoma. On December 1, 1950, a left pneumonectomy was performed with a complete removal of the mediastinal nodes. The postoperative course was uneventful.

Dr. Tice: The roentgenograms of the chest on the first patient were unchanged during the months that we saw him, and present the picture of atelectasis of the base and middle lobe of the right lung. In a person of this age, the most likely diagnosis is a bronchial carcinoma, whereas in a child such a lesion would probably be due to a foreign body. Inflammatory changes, broncholiths and bronchial adenomas can produce atelectasis such as this, and bronchiectasis could produce the mottled peribronchial infiltration seen in this case.

The chest roentgenograms on the second patient reveal an unusual 12 cm. tumor mass, located peripherally in the lower lobe of the left lung (Figure 1). Originally I thought this lesion was probably a neurogenic tumor.

Dr. Helwig: The tissue obtained at bronchoscopy on the first patient was a fairly well differentiated squamous cell carcinoma.

The resected specimen from the second patient showed rather extensive squamous cell carcinoma involving chiefly the lower lobe of the left lung. The mediastinal lymph nodes did not show metastases.

Dr. Stowell: Dr. Johnson, will you comment on the etiology of lung tumors and the relationship of cigarette smoking to carcinoma of the bronchus. The type of cancer associated with tobacco smoking is said to be more frequently of the epidermoid than of the adenocarcinomatous type.

Dr. Johnson: I don't believe that cigarette smok-

*Cancer teaching activities aided by a grant from the National Cancer Institute.

**Trainee of the National Cancer Institute.

ing causes carcinoma. The etiology of carcinoma of the lung is as obscure as that of most cancers. There are a few recognized agents which apparently do increase the incidence of carcinoma of the lung in the general population. In the Schneeberg mining district of Germany, men exposed to certain radioactive ores show a high incidence of carcinoma of the lung.[1] More recent study indicates that there has been an apparent increase in carcinoma of the lung in nickel workers.[1]

The relation of cigarette smoking to carcinoma of the lung is still a debatable matter. I think the best publication on the subject is a recent one by Schreck and associates.[2] They state that there is a statistically significant increased incidence of cancer of the lung among cigarette smokers. However, carcinoma of the lung occurs in people who have never smoked a cigarette, which would suggest that tobacco is a weak carcinogen. Tobacco smoke alone probably cannot produce carcinoma of the lung; but it apparently can be a co-carcinogenic factor. The recently published evidence by Wynder and Graham[3] may not be statistically significant. They stated that a second article was to be published, in which the occupational and economic status of the patients would be shown to be unrelated to the cigarette smoking habit, thus implying that cigarette smoking is the important causal factor in lung carcinoma. In my opinion, cigarette smoking would probably vary considerably with the economic status and with the occupation of the individuals concerned. One must await final judgment on their work until their second article is published.

Dr. Helwig: Several workers have produced carcinoma of the skin of mice by local application of tobacco tars. They are apparently weak carcinogenic agents, because only a small percentage of the animals actually developed cancer. Inasmuch as it is a known carcinogen, it is conceivable that over a period of 25 or 30 years of inhalation of tobacco tars that this might be a significant agent in the production of carcinoma of the bronchus. One can produce cancer of the lung with other known carcinogens, such as 1, 2, 5, 6-dibenzanthracene and methylcholanthrene by simply pulling a suture impregnated with these potent carcinogenic agents through the lungs.

Dr. Stowell: These two patients complained of cough for many years. What is the relationship of cough to carcinoma of the lung?

Dr. Orr: In a patient who has had a cough all of his life and then develops carcinoma, it is extremely difficult to determine when the carcinoma began. Carcinoma of the lung should be suspected in any patient in the cancer age group who develops a cough that persists longer than three or four weeks. Many of these carcinomas are asymptomatic in their early stages and can't be diagnosed until the patients begin to lose weight and develop secondary complications in the lung. An unexplained chronic cough in a man past 40 years of age should warrant

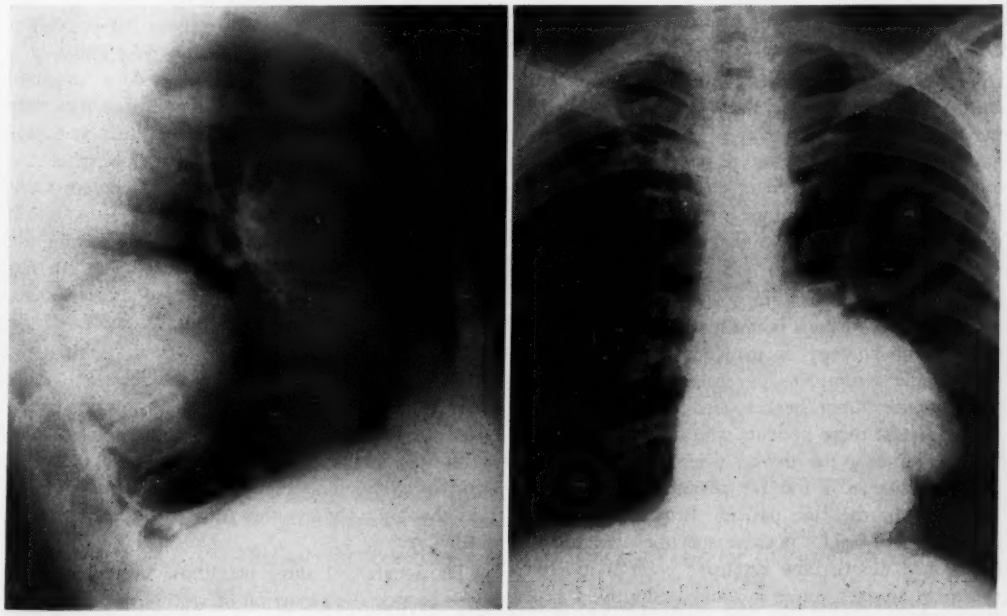


Figure 1. Lateral and posterior-anterior roentgenograms of chest of Case 51-4 showing tumor in base of left lung.

complete examination, including chest roentgenograms and bronchoscopic examination.

Dr. Stowell: It has been suggested that lung cancer could be diagnosed earlier if roentgenologic chest examinations were made on all adults. If the incidence of lung cancer is 16 cases per 100,000 per year, a roentgenologic survey for cancer of the lung alone would be prohibitively expensive. If one is looking for tuberculosis, lung cancer and other types of lung pathology, the results are much better.

Dr. Tice: Although we are trying primarily to find tuberculosis with the photofluorographic program that we have now, we are also recognizing malignancies. Obstructive emphysema and atelectasis are the two principal roentgenologic findings in carcinoma of the bronchus. With tuberculosis ruled out by numerous sputum examinations, there is a 50 per cent chance that cavitation in the lung in a person past 40 is due to a malignancy. The laminograph is of great value in diagnosing lung lesions.

Dr. Proud: Bronchoscopy is another one of several diagnostic procedures for lung cancer and although it certainly isn't accurate in all cases, in many instances the correct diagnosis can be made. Just because we are seeking a bronchial carcinoma does not necessarily mean that the tumor will be present in the bronchus in which one looks. It may be in one of the smaller radicals and be impossible to visualize. One indication of carcinoma is compression of the bronchus when the tumor is lying against its wall. When the neoplasm is visualized, biopsy is possible. Sometimes one can make a positive diagnosis by means of bronchial washings and cytologic study.

Dr. Schafer: Unfortunately many of the patients reach us at a time when the disease is too far advanced and complete resection of the tumor is not feasible. In those cases where resection is possible, often one doesn't succeed in eliminating the tumor from the patient. There are probably few reported groups of patients with higher than 5-10 per cent long term survival.

We are not going to improve our control of this disease until we have a better method for early diagnosis. Bronchoscopy is inadequate; the bronchoscopist is at a complete loss in over half of the patients whose tumor begins outside of his zone of vision, and of those patients who do ultimately present the tumor in the airways where it can be visualized the disease is too far advanced in many, as illustrated by the first patient. Bronchoscopy originally did not yield a positive specimen because the tumor had not become extensive enough to erode the main airways where it could be biopsied.

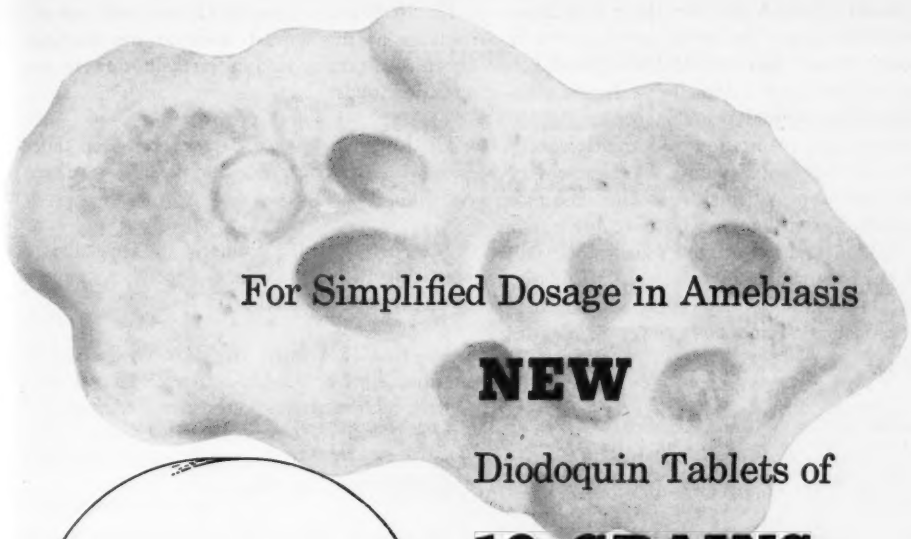
The radiologist can demonstrate the presence of an abnormality in almost all cases of carcinoma of the lung. He usually sees the opacity of the tumor or the changes secondary to the tumor early in the course of the disease, but unfortunately he can't make a positive diagnosis. He can approach the point of guaranteeing that it's carcinoma, but he can't make that last step. Cytologic examination is unsatisfactory in the experience of many.

We can't wait for tomorrow or next year in managing the patients we're seeing today, which means that until such time as we have some better form of diagnosis we've got to change our viewpoint. When we cannot make a diagnosis of an obvious roentgenologic abnormality in a chest film, one has to entertain seriously the prospect of carrying out exploratory surgery to ascertain the nature of that abnormality. We have gone through the period where we carried out exploratory laparotomy under similar circumstances. We are now well into the period where an exploratory thoracotomy is almost our only diagnostic measure in a large number of patients with this serious disease. We have reached low morbidity and mortality rates with exploratory thoracotomy so that it compares favorably with exploratory laparotomy. Until we have better diagnostic measures, we must recommend it consistently.

The first patient, with the lesion in the right chest and the obstructive signs in the right lower lobe, probably had well advanced cancer 10 months ago; perhaps at that time his tumor would not have been resectable, but the chances of his being able to go 10 months and still remain resectable are poor. We were not optimistic about the possibility of being able to resect his lesion, and certainly a negative cytologic examination and a negative bronchoscopy in no way gives any assurance that the patient does not have carcinoma. In a man past 40 years with a minute peripheral opacity of the lung, where one cannot carry out bronchoscopy and where cytologic examination is negative, I would not want to assume the responsibility for giving any assurance that he didn't have a carcinoma. In numerous asymptomatic or nearly asymptomatic cases, small opacities have proven to be carcinoma of the lung.

Dr. Tice: One can conservatively say that 75 per cent of bronchial cancers are treated only for palliation. In the inoperable cases of carcinoma of the bronchus, when the patients have atelectasis or pain, why shouldn't they be given palliative roentgen therapy to relieve this pain, or possibly prolong their lives?

Dr. Schafer: I agree that those individuals who have bronchial obstruction or who have pain should be considered for radiation therapy, in the hope that



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the pain would diminish and that those with bronchial obstruction might get better aeration and be free of some of their signs of obstruction, with perhaps relief of their cough. Actually the largest number of our patients are inoperable because of extensive mediastinal infiltration and multiple node involvement in the mediastinum. We have not referred for radiation patients with diffuse tumor, either by direct extension or who have had tumor with mulitple metastases, because usually their only symptom has been cough, for which little palliation would be obtained. Our major field for improved results in bronchial carcinoma, however, is in earlier diagnosis.

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ACTIVITIES OF MEMBERS

Dr. D. V. Conwell, Wichita, was guest speaker at a recent meeting of the Sedgwick County Medical Assistants' Society.

* * *

Dr. E. E. Edwards, Allen, has opened an office in Emporia for afternoon practice. He will continue to practice in Allen each morning.

* * *

Dr. A. N. Lemoine, Jr., chairman of the department of ophthalmology at the University of Kansas School of Medicine, was one of the guest lecturers at the Ophthalmological Study Course held in Portland, Maine, recently. He spoke on surgical anatomy and principles of the eye.

* * *

Dr. Edward E. Long, who recently completed his internship at St. Margaret's Hospital, Kansas City, has opened an office for practice in Humboldt. He was graduated from the University of Kansas School of Medicine in 1950.

* * *

Dr. C. Henry Murphy has resigned his position as assistant health officer at Wichita to become director of the city-county health department for Topeka and Shawnee County. In Topeka he succeeds Dr. Thomas R. Hood, who has been named secretary of the Kansas State Board of Health.

* * *

Dr. Vernon J. Filley, formerly on the staff of the Santa Fe Hospital, Topeka, has opened an office in Dodge City and is practicing in association with Dr. R. J. Ohman.

Dr. H. Wallace Lane, El Dorado, was one of the speakers at the annual institute for teachers of Greenwood County held in Eureka during the second week in August.

* * *

Dr. Joseph E. Gootee, Topeka, has been called to duty with the Air Force and is now stationed in Amarillo, Texas.

* * *

Dr. Arch J. Brier, formerly of Topeka, is now practicing in Horton and is a member of the staff of the Horton Hospital and Clinic.

* * *

Dr. Paul H. Lorhan, chairman of the section of anesthesiology at the University of Kansas Medical Center, addressed the International Anesthesiology Research Society at a meeting in London early this month. Later Dr. Lorhan will attend a congress of anesthesiologists in Paris.

* * *

Dr. Glen E. Martin, Jr., who has been practicing in Paola during the past year, has announced plans to open an office in Goodland.

* * *

Dr. Franklin D. Murphy, chancellor of the University of Kansas, and Dr. C. H. Benage of Pittsburg, president of the Kansas Medical Society, have been named to serve on a tri-state advisory committee for the second Crusade for Freedom in the United States.

* * *

Dr. J. A. Burger, whose office in his home in Kansas City was badly damaged by the July flood, has established temporary offices in the Huron Building. He will move later to a building now being constructed in Shawnee and will practice in association with his son, Dr. P. B. Burger.

* * *

Dr. Oliver L. Martin, Salina, spoke on socialized medicine before the Kiwanis Club in that city last month.

New Secretary for Board of Health

Dr. Thomas R. Hood, formerly health officer for Shawnee County and the city of Topeka, assumed his new duties as executive secretary of the Kansas State Board of Health on August 1, allowing Dr. Robert H. Riedel, who had accepted a temporary appointment to the position, to return to his regular work as director of the Division of Cancer Control.

Dr. Hood is a native Kansan. He received his medical degree from the University of Kansas School of Medicine, and later earned a master's degree in public health from Harvard. In addition to directing public health activities in Topeka, he has done work in that field in Douglas and Cowley counties.

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* Hamblen, E. C.: Some Aspects of Sex Endocrinology in General Practice, North Carolina M. J. 7:533 (Oct.) 1946.

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Senior Thesis from the University of Kansas Medical School*

The Leukemias: Their Therapy and Prognosis

L. G. Agee, M.D.**
Kansas City, Kansas

The leukemias form one of the most controversial, confused and poorly understood group of diseases in medicine. This confusion is encountered immediately in the study of the leukemias for no one seems to be able to give an adequate definition of them. As must follow, the field is surrounded by an indistinct border of diseases that are by one called leukemias, by another "related to leukemia" or "leukoid reactions."

I will be forced in discussing the leukemias to make a definition which is dogmatic and which will include only those clinical entities that are recognized by all hematologists and internists as leukemia. This leaves a large residue of diseases which have at one time or another been called leukemias or included in the same category as the leukemias, i.e. Hodgkin's disease, chloroma, lymphoma, multiple myeloma, et cetera.

A brief history of leukemia will quickly show that although leukemia has been recognized for only a short period of time, great strides have been made in the diagnosis and clinical picture of the disease, but practically no progress in therapy has been made.

It was first recognized clinically in 1839 by Barth, and the blood was observed microscopically by Donne at that time. Donne published the first description in 1844, followed quickly and independently by John Hughes Bennett of Edinburgh and Rudolph Virchow in Berlin in 1845. Barth, who first recognized leukemia as a clinical entity in a patient, didn't publish his findings until 1855. It remained for Virchow to give the disease its name "leukemia" from the observed postmortem fact that the blood was white. The first recognized case in a child was reported by Bierman in 1861. No knowledge as to the type of cells or a classification of leukemias was possible until Ehrlich in 1879 came forward with stains that would enable differentiation of the types of leucocytes.

From 1879 to 1902, more and more cases were being diagnosed and the clinical and hematological pictures were being filled in with great detail, but there was as yet no therapy capable of producing any effect on the disease.

In 1902, Pusey of Chicago announced the treatment of a case of chronic leukemia in an adult. He reported that the treatment was completely without effect. However, he continued trying increasingly large doses of roentgen rays and within the same year as his first failure reported a complete clinical remission of a case of chronic leukemia under roentgen therapy.

The leukemias that will be considered here may be defined as those diseases in which there is a disturbance in that portion of the hematopoietic system which supplies the leucocytes of the circulating blood and which may be acute or chronic, is progressive and is invariably fatal.

This is a nebulous and indefinite definition for so it must be, because leukemia has so many forms and so many stages of each form.

Before classifying the leukemias, I believe it is well to consider the current hypotheses as to its etiology.

There are at present two main theories as to etiology, (1) the neoplastic and (2) the infectious. The latter, I believe, can be briefly mentioned only for historical interest and the variety of arguments for it can be itemized briefly. They are as follows:

1. A condition called leukosis can be transmitted in birds by a filterable virus.

2. Leukemia produces a leucocytosis and fever like an infection and often comes on following an infection.

3. The highest incidence of leukemia occurs in children and the same is true of infectious diseases.

Although the neoplastic theory is a much more sophisticated theory, and a great deal of work has been done on it, the true etiology of the disease remains unknown. The phenomena supporting a neoplastic etiology are as follows:

1. The morphological characteristics of leukemic tissue are also common to neoplastic tissue.

2. It has the ability to invade the blood stream or to resist entering the blood stream.

3. It has the tendency to localize in different organs.

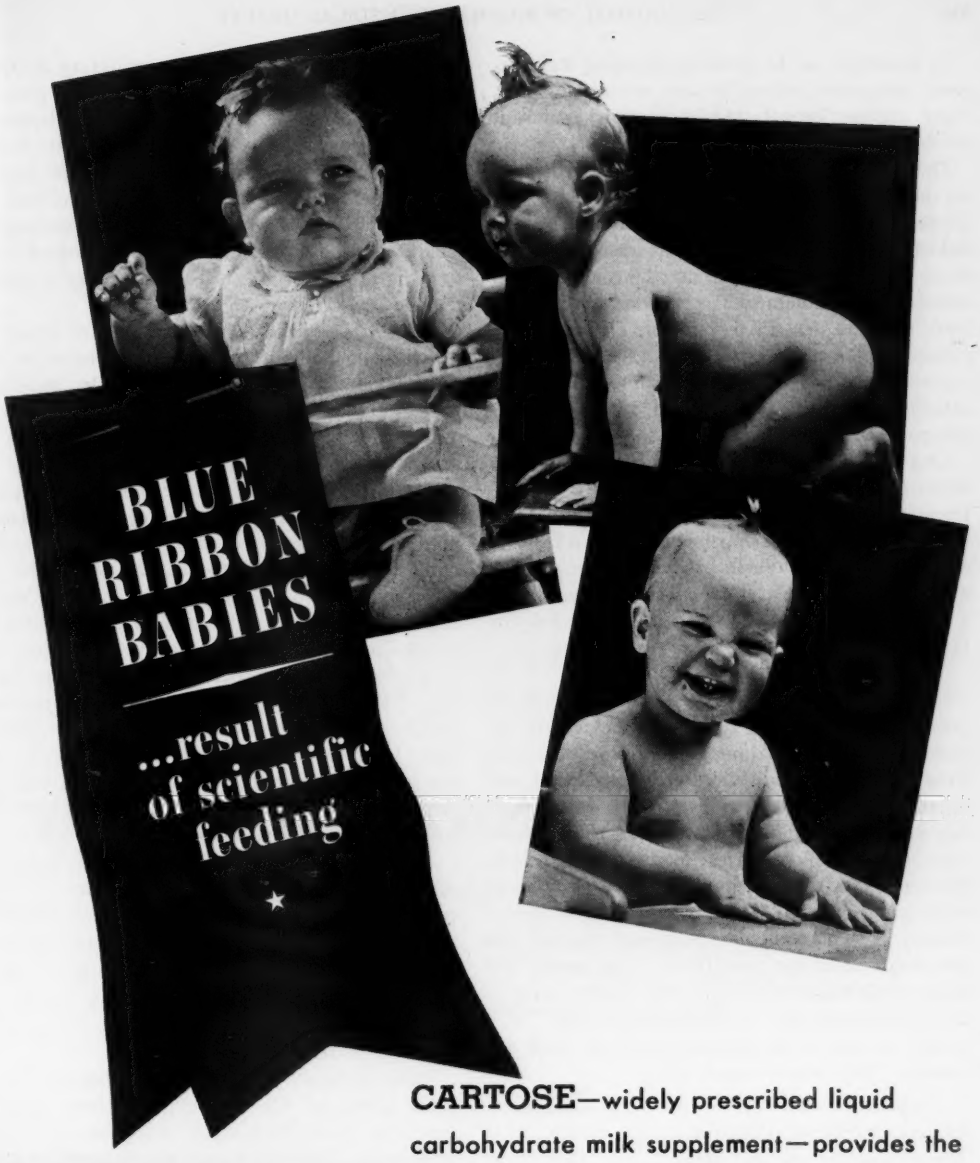
4. It has the ability to produce tumors or diffuse infiltrations.

5. The production of a secondary anemia and/or hemorrhagic diatheses.

6. Leukemia can be transmitted by injecting living, intact leukemic cells.

*This is one of 11 senior theses selected for publication by the Editorial Board from a group of 15 judged the best by the faculty of the University of Kansas School of Medicine.

**Thesis written while the author was a senior student at the University of Kansas School of Medicine. Dr. Agee is now serving his internship at the University of Kansas Medical Center, Kansas City, Kansas.



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7. Leukemia can be produced by using leukemogenic compounds which in turn are carcinogenic. These include benzol, indole, methylchloranthine and benzpyrene.

There seems to be some relation to heredity and the incidence of leukemia. This is suggested by the observation in mice that certain strains become leukemic susceptible. Also a strain that is susceptible to one kind of leukemia may be completely resistant to an inoculum of another kind of leukemia. Study indicates that this is probably a conditionally dominant type of inheritance.

Another theory is that the leukemic cells are potentially neoplastic, i.e. inherited as a unit in a group of cells.

One other viewpoint that fits in with the first theory of heredity in leukemia breaks down into different pathways to explain transmissible and spontaneous leukemia. Transmissible leukemia is believed to be inherited as a dominant characteristic whereas spontaneous leukemia is explained on the basis of a single recessive gene plus an additional localization factor.

Interesting as the theories of etiology of the leukemias are, they as yet have failed to reveal the cause of leukemia and leave us still treating the disease empirically. Although the cause of all the leukemias is unknown, there are many kinds, and these kinds have many classifications. These classifications are based on the morphology of the dominant type of cell concerned in the disease. Classification serves more than the purpose of allowing an accurate diagnosis. It also indicates the type of therapy to which the leukemia will respond and the prognosis of the case. It is for this reason that it is worth while to devote considerable space to classification and the incidence of each kind.

The leukemias are first divided into acute and chronic. The chronic consist of:

Name	*Per cent of total number*
Chronic myelocytic leukemia	26.5
Lymphosarcoma cell leukemia	16.2
Chronic lymphogenous leukemia	15.8
Chronic myelomonocytic leukemia	4.4
Chronic histiomonocytic leukemia	3.2
The acute consist of:	
Acute lymphoblastic	11.7
Acute myeloblastic	8.9
Acute myelomonocytic	8.5
Acute histiomonocytic	4.8

Under chronic myelocytic leukemia will also be considered erythro-leukemia, eosinophilic leukemia, basophilic and megakarocytic leukemias.

The leukemias have a definite relation as to age and sex. Sixty to 79 per cent of acute leukemia occurs under the age of five years. The incidence is greater in males than females except during the first year of life when the incidence in females is greater.

Acute myeloblastic leukemia is the most frequent after the age of 20 years. Acute monoblastic is the most frequent between the ages of 30 to 60 years.

Of the chronic leukemias, myelocytic leukemia is the most frequent up to the age of 60. Lymphocytic leukemia is the most frequently encountered type past the age of 60; rarely is it encountered before the age of 40.

Seventy per cent of lymphosarcoma cell leukemia occurs in males. The incidence in females is the same at almost any age; in males the incidence roughly parallels the incidence of lymphoblastic leukemia in children and lymphocytic leukemia in adults.

The symptoms of the chronic leukemias are practically the same. The differences occur in the blood picture and prognosis of the case. In general the onset is insidious and the earliest symptoms are those referable to the secondary anemia, i.e. weakness, pallor, dyspnea and palpitation. There may be a dull, dragging pain in the left upper quadrant due to a splenomegaly or there may be an actual bulging. Then there are the symptoms of an increased metabolic rate, i.e. weakness, cachexia, fever, weight loss. Later on the symptoms of anemia become marked and the patient begins to have hemorrhagic diatheses. Death usually occurs from an intercurrent infection or a hemorrhage.

It must be remembered that the chronic leukemias may become acute at any time and when this happens the picture is that of a rapidly fatal disease.

Generally the acute leukemias have the same pathology as the chronic except that the picture is much more rapid and intense. The course is usually less than a year from onset of symptoms to its invariable fatal termination.

Onset is usually abrupt, often coming on after an acute infection. The symptoms are fever, malaise, headache, generalized aches and pains and finally prostration. There are signs and symptoms of a rapidly increasing anemia and a severe bleeding tendency. There are often symptoms of oral infection; the spleen is moderately enlarged in two-thirds of the cases; the liver is usually slightly enlarged and lymph nodes may or may not be enlarged.

The similiarity of the symptoms of the acute and chronic leukemias would lead one to suspect that since the primary difference seems to be in the length of the course of the disease, the therapy would be similar and vary perhaps only in degree.

This, however, is not verified by clinical experience. Chronic leukemias respond both to radiation and chemotherapy, whereas the acute leukemias respond not at all to radiation and it is in fact usually

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contraind.cated. It has been just recently that any form of aid for the acute leukemias has been available, and this came in the form of metabolic alteratives or inhibitors.

Before discussing the therapy of the various kinds of leukemias separately, it is advantageous to set up the criteria by which a therapeut.c agent is to be judged. The following would be the requirements of the perfect therapeutic agent for leukemia:

1. Hematologic Remission
   (a) Leucocyte, hemoglobin, erythrocytes and platelet values return to normal.
   (b) Immature leucocytes disappear from the blood stream.
   (c) Bone marrow pattern return to normal.
2. Clinical Improvement
   (a) Return of nodes, liver and spleen to normal size.
   (b) Bleeding tendency disappears.
   (c) Appetite, performance status, and subjective symptoms return to normal.
   (d) Continuous improvement or repeated remissions must be obtained.
3. No drug fast state must be produced.
4. Lack of toxicity.

No treatment as yet can fill all of these criteria. But those agents that have proved most effective will be discussed.

In chronic leukemias, x-ray has been the best by far in the past and still continues to be the most valuable weapon in treatment.

The method of administration is the same in all types and the regimen most employed now consists of giving "intensive therapy." This means giving 100-150 r in single or divided doses using 200 kv. x 25 milliamperes, a 50 centimeter skin target distance with a filter of 0.5 millimeters of copper and one millimeter of aluminum. The body area may be treated by local treatment over spleen, nodes or involved viscus or by the "quadrant method." This divides the body into anterior and posterior chest and anterior and posterior abdomen. Once remission has been produced, many radiologists advocate periodic "spray" application when it is deemed necessary to give more x-ray.

The indications for roentgen therapy are the following:

1. Increasing anemia with erythrocyte count below 4,000,000 and/or hemoglobin below 70 per cent.
2. Enlarged spleen: x-ray directly over the spleen.
3. Loss of weight, fever and anorexia.
4. Large increase in leucocytes or immature forms.
5. Increasing fatigue.
6. Progressive enlargement of spleen, liver, nodes, or signs of leukemic infiltration.
7. Hemorrhagic tendencies.

How does roentgen therapy fit the criteria we have set up for the perfect anti-leukemic agent? The answer is that it will produce complete hematological and clinical remission in a large percentage of the chronic leukemias, but re-exacerbations occur which are increasingly resistant to roentgen therapy until finally it is without effect. The results of intensive roentgen therapy at the Simpson Memorial Institute of the University of Michigan revealed the following results:

REMISSIONS

Type of Leukemia	*good or excellent*	*unsatisfactory*
Chronic myelogenous	90.4%	9.6%
Chronic lymphogenous	84.	16.
Chronic histiomonocytic	58.8	41.2
Lymphosarcoma cell	32.7	67.3

There are several contraindications to be observed in using roentgen therapy. These are:

1. Acute leukemia or acute exacerbations of chronic leukemia.
2. Leukopenia or hemorrhagic tendency.
3. If leucocytes count is more than 200,000 it should be stopped when count reaches 40,000; if initial count is less than 100,000, should stop when count reaches 25,000; if initial count is more than 20,000, should stop when count reaches 20,000.
4. Severe anemia.

In 1939 a new method for applying radiation therapy to the leukemias was found when it was discovered that radioactive phosphorus was selectively localized in leukemic tissue. Many believe that it is superior to x-ray because with it one achieves a localized radiation of the involved tissue, meaning that a higher radiation dose can be given. It acts over a period of time, whereas x-ray has to be given all at once. Also more can be given without the toxic effects that x-ray produces.

The preparations mostly used are P^{32}, the natural phosphorus atom, and P^{31}, the isotope. The absorption of P^{32} depends on bodily requirements, while the absorption of P^{31} has to be determined by giving tracer doses. The metabolism of the two in the body is the same. At first most of it is found in the viscera, but soon practically all of it is concentrated in the skeleton. The deposition in the various organs in decreasing order is bones, liver, stomach, small bowel, heart, kidney, lungs, muscle, skin and brain. The half life of P^{31} and P^{32} is about 14.3 days and their effects are negligible after the seventh half life. The active radiation is the beta particle which can penetrate about 2-4 millimeters of tissue.

The dose employed for adults is 2-2.5 millicuries

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1. Light up either one. Take a puff—don't inhale—and s-l-o-w-l-y let the smoke come through your nose.

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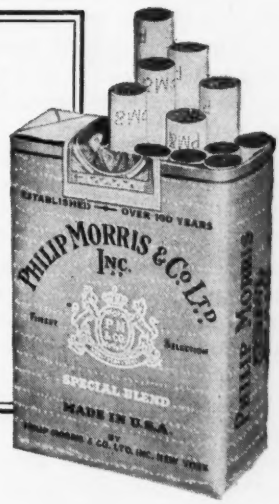

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given intravenously two to three times a week until a substantial effect appears on the blood and marrow.

It produces the same effects as roentgen therapy and as many as five to eight remissions may be obtained.

Toxic effects are not to be feared if care is used. They consist of bone marrow aplasia and pancytopenia when they occur.

Both roentgen therapy and radioactive phosphorus can be expected to prolong the life of the chronic leukemia patient about six to 24 months. Both x-ray and radioactive phosphorus are most effective in chronic myelocytic leukemia and next most effective in chronic lymphocytic leukemia.

Other agents that have been used for chronic leukemia and may produce some degree of remission in patients who no longer respond to radiation are urethane, nitrogen mustard, and arsenic.

Urethane (ethylcarbamate) was first reported in 1946. It had been used experimentally on leukemia in rats and found to produce:

1. Leukopenia
2. Inhibitions of lymphatic tissue similar to x-ray
3. Prolonged life expectancy
4. Fall in total number of immature leucocytes in blood and marrow.
5. Reduction in number of mitotic figures in bone marrow.

Its mode of action was believed to be either (1) a competitive inhibition interfering with the use of a natural amine in synthesis of nuclear protein or (2) an antagonist.

It is administered in crystalline form, gelatin capsules, enteric coated tablets or an aqueous solution. The dose is one to three grams daily until appreciable hematological response occurs, and then one to two grams daily as a maintenance dose.

The experimental results lead one to expect more than we actually see clinically. The individual tolerance to urethane varies greatly and toxic effects seem to be the rule rather than the exception. Nausea occurs in 50 per cent of the cases; vomiting, diarrhea, sweating and drowsiness are common signs of toxicity. With toxic doses there is a severe marrow depression with a pancytopenia.

There is a response similar to that of x-ray. Hematological response occurs within two to three days and this is followed by clinical improvement in 10 to 20 days. The hematological and clinical response seems to be due to arrested mitoses of the leukemic tissue.

Chronic myelogenous leukemia responds best to urethane although all of the chronic leukemias will respond to it. The difficulty lies in its great toxicity, making it almost impossible to keep a patient on it for long periods of time.

Even in those patients who tolerate it the disease becomes drug fast and no longer responds.

The nitrogen mustards were first introduced in the treatment of leukemia in 1941. The two compounds most widely used are methylbis (B chlorethyl) amine, HN_2, and tris (B chlorethyl) amine, HN_3. Of these two, HN_3 is the one most widely used. In the dry state they are very stable, but in solution are highly reactive. Their physiological activity is believed to be due to an intra-molecular cyclization in a polar solvent to form a cyclic onium cation. They are immediately cytotoxic producing (1) inhibition of mitosis, (2) chromosomal abnormalities, and (3) karyorrhexis of the nucleus.

The actions of the folic acid antagonists, A-methopterin, Aminopterin and Amino-an-fol, seem to be similar. Only the dosage varies. However, aminopterin seems to be the most effective and has received the largest clinical usage. The dosages are:

Amino-an-fol	25-50 mg. daily
Aminopterin	0.5-1.0 mg. daily
A-methopterin	3.0-5.0 mg. daily

The mode of action of these drugs is not known. It is believed they interfere with nuclear metabolism. The effect is either quantitative or quantitative and qualitative.

Toxic symptoms are not too much of a handicap under careful management, but are very severe when they occur. They consist of loss of weight, anorexia, alopecia, stomatitis, skin rash, abdominal distention and pain, diarrhea, severe melena, pancytopenia and bone marrow aplasia.

Individual tolerance to these drugs varies greatly. During the first weeks of therapy, daily blood counts should be performed, and even when the dosage has been established, weekly counts should be done to guard against the onset of a fatal pancytopenia and bone marrow aplasia.

Hematologic response occurs in four to seven days. After the leucocyte count falls to 2,000-3,000 cu. mm., bone marrow studies should be the guide to further therapy. Clinical remission begins in 10 to 21 days and lasts six to 52 weeks. About 46.6 per cent of acute myeloblastic and lymphoblastic leukemias get complete initial remissions, but repeated remissions are transient and unsatisfactory.

After surveying the various agents in use for the leukemias, we see that there are no agents capable of adequately handling the disease, but only in prolonging it; it is the physician's responsibility to give supportive therapy to keep the patient as well and comfortable as possible. These measures include:

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(1) diet, (2) treatment of anemia, (3) treatment of bleeding tendency, (4) control of infection.

(1). Diet is important because the elevated basal metabolic rate creates a great demand for protein, calories and vitamins. The great weight loss can be retarded if the patient can be maintained on a diet consisting of at least 125 grams of proteins and sufficient carbohydrates to maintain a 3,000 calorie intake daily. Fats do not seem to be well tolerated, perhaps due to impaired hepatic function.

(2). The treatment of the anemia of leukemia is a herculean task. Folic acid, iron, liver injections, vitamin B complex, vitamin B_{12}, and crude yeast are all without effect on the anemia of leukemia. Although the anemia produced in leukemia is due to leukemia infiltration and toxic depression of the bone marrow, adequate protein, iron and vitamins (especially the B complex) should be included in the diet to eliminate the possibility of a nutritional anemia. The anemia usually improves concomitantly with remission of the leukemia. Most clinicians believe that blood transfusions should be given when the erythrocyte count falls below four million per cubic millimeter and/or the hemoglobin falls below 70 per cent. Blood transfusions seem to be the best if not the only treatment of the rapid anemias of acute leukemia or the acute phase of chronic leukemia. Even this will eventually fail to keep pace with the progressive anemia.

Hunter and Kierman have reported on 53 cases of leukemia in which splenectomies were performed, but the effect on the anemia was not very impressive.

(3). Control of the bleeding tendency follows along the same lines as for the control of anemia. Blood transfusions are the best treatment, but in acute cases practically all measures are without avail. Vitamin C is without any effect at all.

(4). The leukopenia that develops due to the course of the disease or to therapy predisposes to intercurrent infections. The patient during this crisis should be carefully protected from contact with infections and carried on antibiotics.

In summary, it is interesting to note that although there is no therapeutic agent capable of controlling leukemia, there are several agents in chronic leukemia capable of producing repeated hematological and clinical remissions and of prolonging life. These include roentgen therapy, radioactive phosphorus, nitrogen mustards, and urethane.

The fact that these agents are most effective in adults and in chronic leukemia is significant since 66.1 per cent of the leukemias fall in this group.

The acute leukemias so far have responded to any degree only to the folic acid antagonists and these are ineffective in patients under the age of five years. This leaves a residue of 23.1 per cent of all the leukemias that at the present time have no therapeutic agent capable of producing any palliative effect.

The most favorable prognosis as to remissions with treatment and as to length of life is to be expected in those patients with chronic myelogenous and chronic lymphocytic leukemia.

The therapy of leukemia at present forms anything but a desirable picture, but the research going on has revealed several very interesting facts which suggest pathways that may lead to eventual control of this dread disease in the future. One of the most fascinating is the ability to produce immunity in leukemic susceptible rats by the following measures:

1. Inoculation with a sublethal dose of leukemic cells.
2. Injection of normal cells of certain genetic constitution.
3. Administration of heat killed leukemic cells.
4. Injection of ultracentrifuged leukemic cell extracts.
5. The injection of normal defibrinated blood.
6. Inoculation of animals with suspensions of liver and spleen of immune animals.

The thought of an immunization against leukemia is overwhelming and deserves and is getting intense investigation.

Another finding is that diets low in cystine lead to a decrease in carcinogenic leukemia in rats. This is stimulating research in the direction of metabolic disturbance as a cause of leukemia.

A finding that is especially timely because of the furor that is now going on in medicine due to the discovery of the adrenal cortical steroids, is the finding that the absence of the adrenal cortex in rats produces an increase in leukemic cell growth.

Recently clinical experiments in using ACTH and cortisone acetate in the treatment of leukemia have yielded the following results. Striking temporary shrinkage of enlarged lymph nodes, spleens and livers was produced in chronic lymphocytic leukemia, acute lymphocytic leukemia and acute gramlocytic leukemia.

In the acute leukemias it was found to be effective on many cases that were folic acid antagonist fast.

The dosage of ACTH used was 50-100 mg. daily in children and 100-200 mg. daily in adults. Cortisone acetate doses were 100-200 mg. daily in children and 200-400 mg. daily in adults. The improvement with these drugs is again only temporary, but it offers new hope and demands further investigation.

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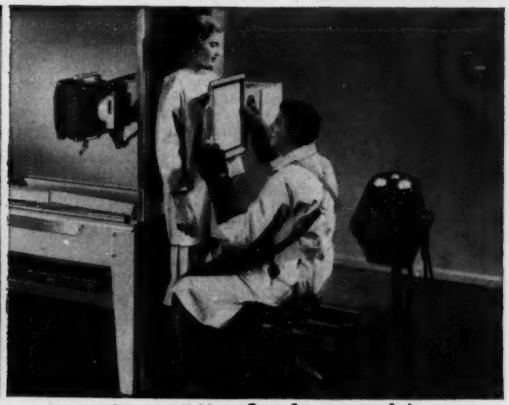

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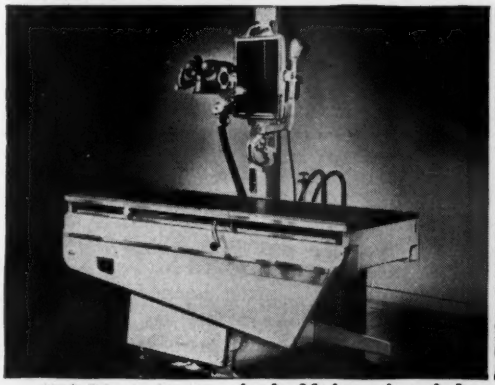

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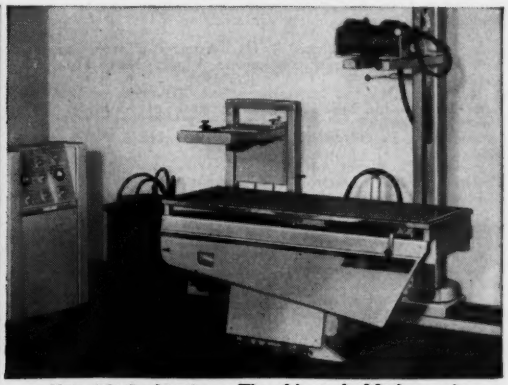

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Cancer Terminology Standardized

The first major attempt to clarify and standardize the complicated terminology of cancer has been made by the American Cancer Society. A book, "Manual of Tumor Nomenclature and Coding," has been issued for distribution to cancer clinics and registries, hospitals, health departments, medical schools, research centers, and individual pathologists, surgeons and statisticians.

Widespread use of the new code is expected since it will be used in conjunction with the American Medical Association's "Standard Nomenclature of Diseases" and the World Health Organization's "International Statistical Classification of Diseases, Injuries and Causes of Death."

Employment of the code will result in more comprehensive statistical records since it classifies both benign and malignant tumors according to histologic origin. Heretofore, most cancer death and incidence records have indicated only the body site of tumors.

Work on the manual has been in progress since 1948 under the direction of the American Cancer Society statistics committee. The practicality of the code was tested by coding experimentally more than 30,000 tumor histories and reports.

It is not too early to make plans for attending the 93rd annual session of the Kansas Medical Society. The meeting will be held in Kansas City, Kansas, April 27-May 1, 1952.

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DEATH NOTICES

SAMUEL MONTEITH MYERS, M.D.

Dr. S. M. Myers, 74, an active member of the Nemaha County Medical Society, was killed August 18 in an automobile accident at Fort Dodge, Iowa. Mrs. Myers died August 20 of injuries received in the accident, and joint funeral services were held at Corning on August 23.

Dr. Myers was graduated from Central Medical College of St. Joseph in 1896, and received his Kansas license in 1901. He practiced in Potter until World War I, after which he opened an office in Corning, where he continued to practice until his death.

* * *

OLIVER JOHN CORBETT, M.D.

Dr. O. J. Corbett, 75, who had been practicing in Emporia since his graduation from the Louisville Medical College in 1903, died at his home there on August 24. He was an honorary member of the Lyon County Medical Society, and at one time had served as president of the group. He specialized in surgery and took postgraduate work at New York University and in Vienna. During World War I he served in the Army medical corps.

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SOCIALIZED MEDICINE

This is the 22nd of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

President Truman recently issued a so-called peace offer on health insurance. This was followed by a detailed statement to the press by Oscar Ewing on the new proposal the administration is making for socialized medicine. At this time the bill has not been introduced, but it will be shortly and the points to be included have been made by Mr. Ewing in his press release.

The idea received its start about the middle of June when President Truman stated that he would give up his health insurance program if critics "will come up with a better proposal—or one that is almost as good." He then qualified these remarks by saying voluntary insurance programs were growing but that these plans "do not meet the problem." He added that 75,000,000 Americans have no health insurance at all. By implication this must mean that 75,000,000 Americans have health insurance, and we are of the opinion that this is not bad in view of the short period during which plans have been in effect.

Then on June 25 at a press conference Mr. Ewing detailed the plans for a new socialization program. He said in part, "I have called this press conference to announce that I am recommending that the President include in his legislative program a plan which would provide hospitalization insurance up to 60 days a year for persons 65 and older and dependents of deceased persons insured under the Old-Age and Survivors Insurance system . . .

"The full cost of these hospitalization benefits can be paid out of present social security payroll deductions; hence these do not need to be increased and no general tax money is required.

"In actual operation, the program would work very simply. When the physician of a person entitled to these benefits determined that he should be hospitalized, the doctor would, wherever possible, make the necessary arrangements. The patient could remain in the hospital so long as necessary up to 60 days in a year and the hospital costs would be paid directly to the hospital out of the insurance fund. Unfortunately, we cannot guarantee that every beneficiary needing hospitalization can be admitted to a hospital but if he is admitted the cost, to the extent indicated above, would be paid . . .

"By 1953 the program would cover approximately seven million people—and 1953 is about as soon as the program could be put in operation. The hospitalization insurance benefits would be available to (1) persons 65 and over (and their dependents) who are insured for retirement benefits under the existing law; and (2) widows under 65 with dependent children, and any other survivors, who are eligible to receive survivors' benefits under existing law . . .

"The cost of this hospitalization program for the first year is estimated at about $200,000,000. A specific wage deduction to cover this cost would be less than two-tenths of one per cent per annum, one-tenth being paid by the employer and the other one-tenth by the employee. Such a small additional wage deduction is not practicable and is definitely not necessary, since the cost of this hospitalization is well within the financing arrangements now embodied in the social security program. This program already provides for a series of increases in contributions up to 1970, when they will be 6½ per cent.

"The proposed plan will furnish hospitalization insurance for large groups of people who cannot now, as a practical matter, obtain such insurance. Voluntary non-profit plans and commercial insurance companies, almost without exception, do not cover people 65 and over on the grounds of age or physical condition. The people under 65 who would be beneficiaries under the plan, by and large, cannot afford such insurance. For these reasons, the plan does not invade a field of substantial interest to private insurance, non-profit or commercial.

"The hospital services which would be provided under the plan are those services, drugs and appliances which the hospital customarily furnishes its bed-patients. Specifically excluded would be any medical care except such as is generally furnished by hospitals as an essential part of hospital care for bed-patients. The program would not cover hospitalization in a tuberculosis or mental institution or services provided by institutions like those which specialize in the care of chronic cases."

For a sick man or woman disease is an acutely personal problem, but it is also a communal problem. And if the public is to cooperate with the medical profession in the treatment of disease in the individual it will, we believe, be able to do this more intelligently if it has some idea of the size of the problem to the nation at large. Tuberculosis is an obvious example. The medical profession is only too well aware of the personal tragedies that have been caused by the purveyors of quack remedies for such dangerous diseases as cancer.—*British Medical Journal, Editorial, March 17, 1951.*

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ANNOUNCEMENTS

The annual postgraduate course in diseases of the chest sponsored by the Council on Postgraduate Medical Education and the New York State Chapter of the American College of Chest Physicians will be held at the Hotel New Yorker, New York City, November 12-17. The course is open to all physicians, but the number of registrants will be limited so applications will be accepted in the order in which they are received. Tuition fee is $50. Applications should be sent to the American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

* * *

A forum on fundamental surgical problems, designed to bring out the best of what is new in surgery and give younger surgeons doing original work a chance to be heard, will be one of the highlights of the 37th Clinical Congress of the American College of Surgeons, San Francisco, November 5 through November 9. Dr. Owen H. Wangensteen, professor of surgery at the University of Minnesota Medical School, is forum chairman. A total of 151 reports on all phases of surgery will be presented.

* * *

The American Dermatological Association is offering a prize of $300 for the best essay submitted on original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. Manuscripts are to be typed with double spacing and submitted in triplicate not later than December 1, 1951, to Dr. Louis A. Brunsting, 102-110 Second Avenue, Southwest, Rochester, Minnesota.

* * *

The interim session of the American College of Chest Physicians will be held at the Ambassador Hotel, Los Angeles, December 2 and 3, 1951. A scientific session will be presented on December 2 by the California chapter, including round table luncheon discussions and an x-ray conference. The Board of Regents of the College will meet on December 3, as well as various councils and committees. Dr. Edward W. Hayes, Monrovia, California, is chairman of general arrangements, and Dr. Alfred Goldman, Beverly Hills, is chairman of the committee on scientific program.

* * *

The office of the American Board of Obstetrics and Gynecology is now located in Cleveland. All communications should be addressed to Robert L. Faulkner, M.D., Secretary-Treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

The American Goiter Association is offering the Van Meter prize award of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. Essays may cover either clinical or research investigations and should not exceed 3,000 words in length. Typewritten double spaced copies, in duplicate, are to be sent to Dr. George C. Shivers, 100 East St. Vrain Street, Colorado Springs, Colorado, not later than March 1, 1952.

* * *

The American College of Chest Physicians announces that an award of $250 will be given annually for the best original contribution, preferably by a young investigator, on any phase relating to chest disease. Manuscripts submitted will become the property of the College and will be referred to the editorial board of *Diseases of the Chest* for consideration. Contestants are advised to study the format of the publication for information on length of articles accepted, style and arrangement of illustrations.

Five typewritten copies of the manuscript should be submitted to the executive office of the College, 112 East Chestnut Street, Chicago 11, not later than April 1, 1952. The only means of identification of the author or authors shall be a motto or other device on the title page, and a sealed envelope bearing the same motto on the outside, with name or names inside.

Replace Flood Damaged Products

Parke, Davis and Company has announced plans to replace without charge all Parke-Davis products damaged or destroyed by the July flood in retail drug stores throughout Missouri, Kansas and Oklahoma. Field representatives of the company are helping druggists take inventory of their stocks. Scores of stores in the area were damaged in varying dgerees, and some were completely destroyed.

Church Refutes Publicity

In order to refute an impression that a recent message from Pope Pius XII endorsed socialized medicine, the American Medical Association is publishing the text of the Vatican letter and an editorial which appeared in a recent issue of the *Tablet,* a Catholic publication in New York. The editorial concludes that the letter is far from being an approbation of socialized medicine and instead is a warning against such plans.

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BOOK REVIEWS

Hospital Staff and Office Manual. By Radeusz M. Larkowski and Albert R. Rosanova. Published by Romaine Pierson, Inc., Long Island, New York. 428 pages, numerous illustrations, figures and tables. Price $4.95.

This manual of medical technics and procedures is useful to the entire hospital and office staff. It covers all of the specialties concisely and effectively. —*W.L.V.*

* * *

Clinical Pediatric Urology. By Meredith Campbell with assistance from Elvira Goettsch and John D. Lyttle. Published by W. B. Saunders Company, Philadelphia, 1113 pages, 543 figures. Price $18.

Dr. Campbell's book, *Pediatric Urology,* was published as a two-volume work in 1938, and it has been the definitive study in the field of pediatric urology. It is with great pleasure that we welcome this new revised one-volume edition. This volume is beautifully printed and illustrated, and has an invaluable bibliography at the end of each chapter. The operative procedures are well illustrated and up to date. Dr. Campbell's book remains as the classic in its field and is a valuable additon to the library of general practitioners as well as pediatricians and urologists.—*W.L.V.*

* * *

Surgical Forum, American College of Surgeons, October 1950 edition. Published by W. B. Saunders Company, Philadelphia. 665 pages, 260 figures, 6 tables. Price $10.

This publication contains all of the papers presented at last year's Surgical Forum on Fundamental Problems at the American College of Surgeons (Boston, October 1950). It is the first time that such a compilation has been attempted and as such it presents these articles many months before their publication in surgical journals.

The contents are divided into surgery of the lungs and esophagus; surgery of the stomach; surgery of the peritoneum, small and large bowel and pancreas; liver and bile ducts, portacaval anastomosis and kidney; cardiac surgery; blood vascular system and blood flow; neurosurgery; wounds and wound healing, tissue transplantation, antiseptics and antibiotics; water, electrolytes, protein, preoperative and postoperative care, fat metabolism, nutrition and skin preparation; blood transfusion, coagulation; shock and hemorrhage; malignancies and endocrines; and anesthesia.

The articles are concerned with current research on surgical problems. The individual papers are brief (139 are presented in full, 45 are abstracted), but they contain the pertinent bibliography, photographs and illustrative charts.

The book is a marvelous collection of information summarizing contemporary surgical research. Not only is it a compendium of laboratory investigation in surgical problems, but it will serve as a stimulus to all who are fortunate enough to peruse it. It is hoped that this collection of papers will continue to appear each year as an annual volume.—*C.F.K.*

* * *

The Neuroses. Diagnosis and Management of Functional Disorders and Minor Psychoses. By Walter C. Alvarez. Published by W. B. Saunders Company, Philadelphia. 667 pages. Price $10.

The reviewer would like to praise this book highly and recommend it to all physicians. The points on which he would disagree are primarily of a technical nature, and it is felt better not to even mention them.

Dr. Alvarez has written a book which is practical, down-to-earth, and certain to be of enormous value to a non-psychiatrist physician. It is written in common language without complicated obscure terminology. The point of view is that of the internist, and Dr. Alvarez discusses common problems which plague the general practitioner and the internist. He gives very practical advice and information. The bibliography and index are excellent. In all, the reviewer can only be enthusiastic in reviewing this book.—*M.J.*

* * *

Clinical Heart Disease. Fourth Edition. By Samuel A. Levine. Published by W. B. Saunders Company, Philadelphia. 556 pages, 192 figures. Price $7.75.

The book is written in the same manner as the previous editions, namely a rather simple presentation of the subject of heart disease in, as the author says, a manner which would appeal to the general practitioner. In the past this book has appealed to the general practitioner and medical student. This text differs from the many others in the field which attempt to cover the entire subject expressing various opinions and furnishing large bibliographies. This book is one man's opinion presented in essay manner without too much discussion of the pros and cons of any given treatment or idea. The tremendous clinical experience of Dr. Levine guarantees that the book is founded on thorough information.

The second section of the book differs from those previous editions in that it is written by Dr. Harold Levine. This section is devoted entirely to electrocardiography and is approximately 200 pages

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Dermatology and Syphilology. Sec., Dr. George M. Lewis, 66 East 66th St., New York 21. Written, Chicago, March 1952. Oral, Chicago, May 1952. Final date for filing, Feb. 1, 1952.

Internal Medicine. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3. Written, various centers, Oct. 15.

Obstetrics and Gynecology. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6. Oral, Chicago, June 7-13, 1952. Final date for filing, Feb. 1, 1952.

Ophthalmology. Sec. Dr. Ewin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine. Written, Feb. 4-5, 1952, 25 centers. Oral, Oct. 8-13, Chicago.

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Surgery. Sec., Dr. J. Stewart Rodman, 225 South 15th St., Philadelphia. Written, various centers, March 1952. Final date for filing, Dec. 1, 1951.

Thoracic Surgery. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit. Oral, St. Louis, Nov. 2, 1951.

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in length. It is actually a separate textbook on electrocardiography. This section is very well written and presents the present concept of electrocardiography quite well.—*E.G.D.*

* * *

From A Doctor's Heart. By Eugene F. Snyder. Published by the Philosophical Library, New York. 251 pages, 18 illustrations. Price $3.75.

Dr. Snyder, himself a native of Russia and a survivor of the Russian revolution, has a rich background for an autobiography. The story is one of his own life, hardships, and philosophy.

He weaves his story about an acute coronary occlusion and the time he spent in the hospital. The discussions are those he had with his young son and are as diversified as any parent's conversation with his child might be. He vividly describes his prodromal symptoms and the hours of agony that followed the acute attack. Perhaps even more significant is the description of the specialists who cared for him and his own reaction to usual hospital care.

The book is more than the story of an infarction, it is the story of a man's struggle for life, career, and happiness. It is the story of the thoughtlessness people are guilty of at an hour of crisis. It is a story from a doctor's heart that should touch the heart of every physician and soften the heart of the specialist.—*L.E.L.*

Kansas Licenses to 134

A total of 134 physicians received licenses to practice in Kansas recently, according to an announcement made by Dr. O. W. Davidson, Kansas City, secretary of the Kansas State Board of Medical Registration and Examination. Forty-six of the group were out-of-state applicants, the largest number of non-Kansans ever licensed at any one time.

Those who received licenses as the result of examinations given in June and the locations in which they intend to practice are: Dr. Loren Glenn Agee, Topeka; Dr. Bob Barcus Andrews, Bethel; Dr. Marvin Dale Atwood, Oswego; Dr. Benjamin William Barker, Winfield; Dr. Harlan Wilbur Berthelsen, Kansas City, Missouri; Dr. Robert Leonard Brenner, Jr., Kansas City; Dr. Russell Eugene Bridwell, Topeka; Dr. William Hobart Burch, Plains; Dr. Gordon Warren Burkey, Jr., Arkansas City; Dr. Enery Rudolph Calovich, Kansas City; Dr. William Gordon Chappuie, Kansas City; Dr. Dale Edward Clark, Cedar Vale; Dr. James Harold Coffman, El Dorado; Dr. Henry Franklin Coulter, Kansas City; Dr. Carl J. Cramm, Jr., Russell.

Dr. Dorothy Rose Danna, Tulsa; Dr. William Wade Dodson, Great Bend; Dr. Charles Winston Dreher, Kansas City, Missouri; Dr. Peter D. Ens, Kansas City; Dr. Thomas Sinclair Evilsizer, Jr., Kansas City; Dr. Robert Eugene Feighny, Mission; Dr. Barton Lee Fischer, San Francisco; Dr. Virgil Earl Flanders, Mission; Dr. Robert Wayne Friggeri, Kansas City; Dr. Charles Mac Geyer, Topeka; Dr. Philip Merle Goering, Moundridge; Dr. John Armel Googins, Topeka; Dr. William Andrew Granstedt, Sacramento; Dr. Arnold Hillel Greenhouse, Kansas City; Dr. Floyd Benedict Grillot, Parsons; Dr. Carl Christian Gunter, Kansas City, Missouri.

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References:

1 Krantz, Kibler and Bell: "The Neutralization of Gastric Acidity with Basic Aluminum Aminoacetate," J. Pharmacol. and Exper. Therap., 82:247 (1944).
2 Paul, W. D., and Rhomberg, C.: "Medical Management of Uncomplicated Peptic Ulcer," J. Iowa M. Soc. 35:167-85 (1945).
3 Holbert, J. M., Noble, Nancy, and Grote, I. W.: J.A.Ph.A., Scientific Edition, 36:149 (1947).
4 Holbert, J. M., Noble, Nancy, and Grote, I.W.: J.A.Ph.A., Scientific Edition, 37:292-294 (1948).

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POSTGRADUATE COURSE IN GYNECOLOGIC CANCER

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Faculty	*Subjects*
LUDWIG A. EMGE, M.D., Professor of Obstetrics and Gynecology, Leland Stanford University School of Medicine, San Francisco.	The Evolution of the Estrogen-Cancer Hypothesis What Relation Does Estrogen Bear on Human Genital Cancer? Basic Requirements for Adequate Therapy of Genital Cancer The Meaning of Vaginal Bleeding in Older Women The Meaning and Significance of Noninvasive Cancer Pregnancy and Genital Cancer
NORMAN F. MILLER, M.D., Professor of Obstetrics and Gynecology, and Head of Department, University of Michigan, Ann Arbor	Care of the Advanced Cancer Patient Diagnosis and Treatment of Carcinoma of the Endometrium
JANET E. TOWNE, M.D., Associate Professor of Obstetrics and Gynecology, Stritch School of Medicine, Loyola University; Member Henry Schmitz Medical Foundation, Chicago	X-Ray and Radium in the Therapy of Cervical Cancer The Place of Surgery in the Treatment of Cervical Cancer
University of Kansas Faculty:	
ROBERT L. NEWMAN, M.D., Associate Professor of Obstetrics and Gynecology	Carcinoma of the Ovary Carcinoma of the Vulva and Vagina
RUSSELL W. KERR, M.D., Instructor in Pathology	The Papanicolaou Smear
LeROY A. CALKINS, M.D., Professor of Obstetrics and Gynecology	Follow-up and Re-Treatment of Carcinoma of the Cervix The Human Cervix in Health and Disease (Colored Movie)

Round Table Discussions:

Participants	*Topics*
DR. FERDINAND C. HELWIG, DR. RALPH H. MAJOR, DR. GALEN M. TICE, DR. WILLIAM P. WILLIAMSON, and DR. CALKINS	Functioning of the Cancer Clinic
DR. EMGE, DR. MILLER and DR. CALKINS	Carcinoma of the Endometrium
DR. EMGE, DR. TOWNE and DR. CALKINS	Carcinoma of the Cervix

This course replaces for the present year the annual course in Obstetrics and Gynecology

Topeka; Dr. Jack W. Welch, Halstead; Dr. James Carey Pike, Kansas City.

The list of out-of-state physicians and their intended locations includes the following: Dr. John Martin Anderson, Topeka; Dr. Milton Henry Anderson, Osawatomie; Dr. William Wilchia Armistead, Jr., Wichita; Dr. Franklin Charles Behrle, Kansas City; Dr. Leopold Bellak, New York City; Dr. Hal Arthur Burnett, Parsons; Dr. Robert Francis Byrne, Liberal; Dr. William Harvey Crouch, Jr., Topeka; Dr. Edmunds Grey Dimond, Kansas City; Dr. Vewiser Leroy Dixon, Kansas City, Missouri; Dr. Frank Xavier Dwyer, Mission; Dr. Allen Jay Enelow, Topeka; Dr. Edward George Feldman, Topeka; Dr. Frederick Alpheus Gans, Webster Groves, Missouri; Dr. LeRoy Goodman, Kansas City, Missouri.

Dr. Robert Franklin Goodwin, Wichita; Dr. John Anthony Grimshaw, Topeka; Dr. Edward James Guy, Kansas City; Dr. Ralph Lee Hopp, Hardtner; Dr. Henry Edwin Huston, Kiowa; Dr. C. Laurence Johnson, Kansas City, Missouri; Dr. Edward Ernest Johnson, Jr., Norton; Dr. Robert Thomas LeNeve, Hooker, Oklahoma; Dr. Henry Lihn, Topeka; Dr. Kenneth Albert Mangels, Wichita; Dr. Isaac Vaughn Manly, Winfield; Dr. Raymond Adrian McCanse, Kansas City, Missouri; Dr. Richard Kenneth McLean, Colby; Dr. Harold Louis Meyers, Topeka; Dr. Jack Pershing Miller, Hays.

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ABSTRACTS FROM CURRENT LITERATURE

Diverticulitis of the Colon

Diverticulitis of the Colon. By Charles W. Mayo, Post. Med., 8:5, 368-373, Nov. 1950.

In this paper presented November, 1949, before the meeting of the Interstate Postgraduate Medical Association, Dr. Mayo reviews 202 cases of diverticulitis over a ten year period, 1939-1948. Ten per cent of those over 50 years of age have diverticulitis. The author feels that there is a hereditary factor in connection with this condition and has noted that a good many patients have been obese at some period of their lives. Most patients can be treated satisfactorily, medically. Early diagnosis and prompt medical treatment are advised, rest and sedation, deep diathermy and hot stupes, antibiotics, fluids by mouth and vein. These minimize surgical intervention for most patients.

Symptoms in the 202 cases were noted as follows: obstruction, one-half of cases; abscess, one-fourth; fistulas, one-third; melena, eight per cent. Average duration was two years and two months.

In roentgenologic examination it is noted that diverticulitis practically always begins in the left side in the sigmoid and as time goes on the number of diverticula continues to increase and they ascend the colon. In discussing the accuracy of roentgenologic diagnosis the author points out that not all cases can be given a roentgenologic examination due to the acuteness of the situation and too much pressure should not be put on the bowel. A diagnosis was made of diverticulosis, diverticulitis, or obstruction of indeterminate origin in 94 per cent of the cases. The diagnosis of a lesion needing surgical intervention was accurate in 97 per cent. However, in 1.7 per cent of the cases a roentgenologic diagnosis of diverticulitis was made when actually the patients had carcinoma, so one must be cautious in such situations and be sure of the condition.

In discussing what he considers inadequate surgery the author points out that in the group of 202 cases there were seven cases in which exploration and closure only were carried out at the first operation. In four of these cases persistent fecal fistulas followed this procedure. Instead of exploration he believes transverse colostomy should be performed,

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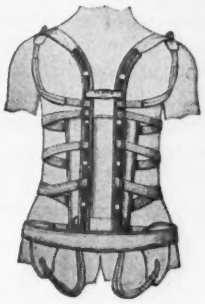

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followed later by resection or, if a right rectus incision is made and a growth is found on left side and is movable, he believes another incision should be made and either primary resection or an extraperitoneal type of resection should be performed.

Twenty-six patients had drainage alone and 24 of these later had persistent fistulas. Therefore he believes colostomy should be performed on the transverse colon on all those cases at the time of drainage. In nine instances local closure of the fistulas was attempted and in two of the nine this procedure was successful. It is his belief that all of these patients should have had resection in multiple stages or more rarely primary anastomosis following the resection.—*J.J.H.*

* * *

Medical Management of Goiter

Observations on the Prolonged Medical Management of Toxic Diffuse Goiter with Thiouracil and Propylthiouracil. By Samuel U. Greenburg and Maurice Bruger, Am. Jnl. Med. Sc., 220:4, 373-380, Oct. 1950.

These observations are based on studies over a five-year period. Thiouracil was first used, but propylthiouracil was substituted as the therapeutic agent in 1946. Cases treated were those of diffuse goiter with hyperthyroidism.

An adequate course of therapy was considered to be at least one year, using an initial dose sufficient to bring the B.M.R. down to normal range, preferably to a minus level. Thereafter, a maintenance dose was given to hold the B.M.R. at that level. It was felt that a significant remission should extend for at least six months after discontinuing the drug, and preferably for a year or more.

Forty-seven patients received an adequate course of therapy. Eight of these failed to return for adequate observation. Of the remaining 39 patients, 64 per cent have had remission for over a year, and 77 per cent for over six months. Nine patients had recurrences, eight of which occurred within the first four months after stopping the drug. There were only five male cases in the series of 39. Four of these five had recurrences. Of the 34 female patients, only five had recurrences.

Three cases of granulocytopenia occurred with thiouracil; only one occurred with propylthiouracil. Pyridoxine hydrochloride appeared to act as a granulocytic stimulant in these and other patients with leukopenia.

Eighteen patients had thyrotoxic exophthalmos. No one instance of progression was noted during administration of propylthiouracil; nine receded partially or completely while under treatment.

In 13 of 27 cases, the thyroid gland decreased in size during propylthiouracil administration. In 12 cases, it did not change. Only in the remaining two was the gland enlarged during therapy.—*E.J.R.*

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Nov. 12-14 GYNECOLOGIC CANCER
Dec. 10-12 PULMONARY PHYSIO-PATHOLOGY
Jan. 21-25 SURGERY
Jan. 28-30 PEDIATRICS
Feb. 25-27 RADIOLOGY
Mar. 10-15 ELECTROCARDIOGRAPHY
Mar. 17-21 OFHTHALMOLOGY and OTOLARYNGOLOGY
Mar. 24-26 GERIATRICS
Apr. 14-16 ANESTHESIOLOGY

CONTINUATION TYPE COURSES

Oct. 18-April 17 GENERAL PRACTICE (Afternoon and Evening session, 3rd Thursday of each month)
Feb. & Mar. ROENTGENOLOGICAL PHYSICS (One session weekly, day and hours to be determined)
Jan. 24-Feb. 28 DIAGNOSTIC UROLOGY (All-day program on Thursday—6 weeks)
Mar. 20-April 24 DIAGNOSTIC X-RAY AND FLUOROSCOPY (All-day program on Thursday—6 weeks)

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Esophageal Surgery, One Week, starting October 15.
Thoracic Surgery, One Week, starting October 8.
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Breast & Thyroid Surgery, One Week, starting October 1.
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OBSTETRICS—Intensive Course, Two Weeks, starting November 5.

MEDICINE—Intensive General Course, Two Weeks, starting October 1.
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Head Pain as a Diagnostic Lead

Frequently the presence of head pain is overlooked. The physician learns of it only if he has made an effort to elicit the information. Since the etiology of the pain is the basis of rational management, the patient should be warned against taking medication before diagnosis is made.

Friedman[1] deplores the tendency to call any chronic recurring headache migraine. Careful history-taking and full physical and neurological examinations are essential for accurate diagnosis. A good starting point is a description of the headache — its character, laterality, frequency and intensity.[2]

The following chart gives briefly the primary diagnostic leads and treatment for the most common types of headache.

Etiology of Headache	Primary Diagnostic Data	Primary Therapy
Inflammatory e.g., Meningitis Abscess	Inflammation of intracranial structures; fever; leucocytosis; bacteriologic diag.	Specific: sulfonamides and antibiotics. Symptomatic: analgesics.
Tumor	Pain varies as spinal press. changes; skull X-ray.	Specific: surgery. Symptomatic, analgesics &/or hypnotics.
Sinusitis	Sinus congestion and infection; cloudy X-ray.	Specific: antibiotics and drainage. Symptomatic: analgesics.
Hypertensive	Hypertension present but pain not related to b. p. level; Dihydroergotamine. relieves pain.	General hypertension therapy; sedation. Symptomatic: analgesics.
Migraine & other vascular headaches	Headache: recurrent, intense, throbbing. No organic causation; migraine in family; patient: energetic, perfectionist. Visual prodromata; g-i. upset during headache.	To abort attack: oral ergotamine plus caffeine. General: adjustment to minimize nervous stress.

Data here tabulated is from: Wolf, G., Jr.,[3] and Friedman, A. P.[4]

Cecil[5] ranks vascular headaches, e.g., migraine and tension headaches, as the most commonly encountered of all. Because of their functional nature and usual recurrence at frequent intervals, they present a long-term therapeutic problem.

Therapy is conducted along two lines:

1) Psychotherapy to reduce the frequency of attacks. This consists mainly of advice on emotional adjustment to stressful situations and guidance toward a good balance between work and relaxation.

2) Treatment of the distressing attack to prevent the usual period of incapacitation. Many investigators have reported that ergotamine preparations are effective for relief of the acute migraine attack in 80% of cases.[1,6] The drug is given immediately when an attack is approaching and dosage adjusted to the needs of the individual.

1. Friedman, A. P. and von Storch, T.: 99th A.M.A. Session, June 1950. 2. Butler, S. and Hall, F.: M. Clin. N. Amer., p. 1439 (Sept.) 1949. 3. Wolf, G., Jr.: M. J. 34:25, 1951. 4. Friedman, A. P. and Conn, H. T.: Current Therapy, 1950, p. 563; Saunders Co., Phila. 5. Cecil, R. L.: A Textbook of Medicine, ed. 7, 1948, p. 1483; Saunders Co., Phila. 6. Horton, B. et al: Staff Meet. of Mayo Clinic 20:241, 1945.

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Index to Advertisers

Abbott Laboratories XVI
American Meat Institute VIII
Ar-Ex Cosmetics, Inc. 469
Ayerst, McKenna and Harrison, Ltd. 447
Borden Company XV
Brown School 469
Cook County Graduate School of Medicine..... 471
Cooper Drug Company 471
Duncan Laboratories 451
Florida Citrus Commission XIV
General Electric Company, X-Ray Dept. 457
Goetze Niemer Company 468
Hanicke, P. W., Manufacturing Company..... 469
Kansas Oxygen Division 461
King Travel Service 470
Lattimore-Fink Laboratories 459
Lederle Laboratories, Inc. 455
Lilly, Eli, and Company .....Facing XVIII
Major Clinic 459
Mead Johnson and Company .....Back Cover
Medical Protective Company 471
Merck and Company, Inc. V
Munns Medical Supply Company, Inc. 469
Nestle Company, Inc. XII
Neurological Hospital Association 469
Parke, Davis and Company .....Inside front cover and III
Pfizer, Charles, and Company, Inc. ..... X and XI
Philip Morris and Company 453
Physicians Casualty Association 465
Producers Creamery Company 465
Quincy X-ray and Radium Laboratories 472
Quinton-Duffens Optical Company 463
Ralph Sanitarium XVIII
Rexair Division, Martin-Parry Corporation..... 463
Reynolds, R. J., Tobacco Company XIII
Sandoz Pharmaceuticals 472
Schering Corporation .....Inside back cover
Searle, G. D., and Company 445
Smith-Dorsey Company 467
Southwest Scientific Corporation 469
Squibb, E. R., and Sons XVII
Trowbridge Training School 471
University of Kansas Medical Center..... 467 and 470
Upjohn Company ..... VI and VII
Winthrop-Stearns, Inc. 449
Woodcroft Hospital 461
Wyeth, Inc. IX
Zemmer Company 471

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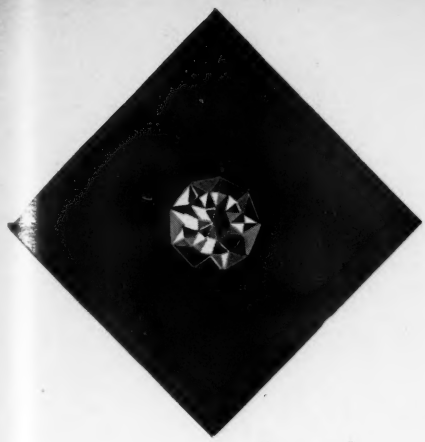

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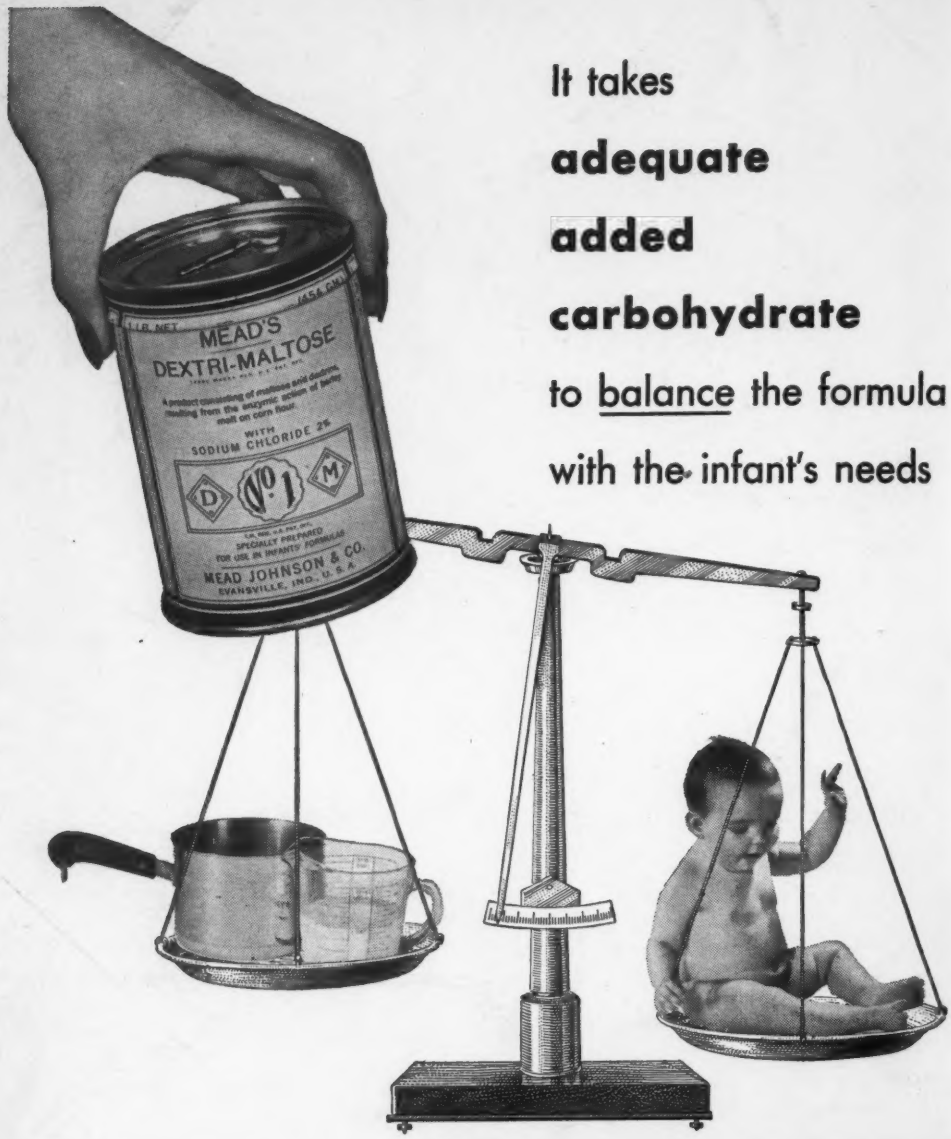

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